

THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer • TRANSPORT • The Railway News
The Railway Times • Herapath's Railway Journal • RAILWAY RECORD.
RAILWAYS • ESTABLISHED 1835 • RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"
Telephone No.: WHITEHALL 9233 (6 lines)

Annual subscription payable in advance and postage free:

British Isles and Abroad£2 5s. 0d.
Single CopiesOne Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 71 No. 12

FRIDAY, SEPTEMBER 22, 1939

CONTENTS

	PAGE
Editorials	389
Letters to the Editor	392
The Scrap Heap	393
Overseas Railway Affairs	394
The Railways of Poland, 1918-1939	397
Advertising in War Time	398
Road Transport Section	399
Railway News Section	407
Personal	407
Railway Share Market	416

Raoul Dautry

THE appointment of Minister of Armaments to the French Government is of supreme importance, and that it should have been filled by Monsieur Raoul Dautry, one of the ablest railway administrators in France, is a comforting thought. M. Dautry was born in 1880 and joined the Ch. de f. du Nord in 1903 as a District Engineer. For his war services, mainly concerned with permanent way construction and maintenance, M. Dautry received the Legion of Honour on the field from Monsieur Clemenceau and Maréchal Foch. After the war, as Chief Permanent Way Engineer of the Nord, he was largely responsible for the reconstruction of the lines in the devastated areas. In November, 1928, he was appointed General Manager of the Ch. de f. de l'Etat, at a time when that system was at a low ebb of efficiency. With the characteristic energy known to those who had watched his work on the Nord, M. Dautry set to work with such good effect that only four years later we were able to place before our readers, in THE RAILWAY GAZETTE of January 6, 1933, a description of accomplishment that must be nearly, if not quite, unique in the annals of railways. The Etat, almost a by-word so little while before, then formed one of the pleasantest and most reliable transport organisations to be found anywhere. M. Dautry's influence was apparent both in the demeanour of the staff, among whom judicious delegation of authority coupled with sympathetic consideration had induced a new self-respect and *esprit-de-corps*, and in the high standard of the transport services. M. Dautry retired from the general managership of the Etat in 1937, and latterly has been a Director of the French National Railways Company. His new sphere of activity will provide unlimited scope for his great administrative gifts and will assure the French army of an adequate backing in material.

London Transport Assessment

By reason of the varied character of the activities of the London Passenger Transport Board the drafting by the Railway Assessment Authority of the first valuation roll of the transport undertaking of the board is taking longer than was expected. Procedure is governed by the Railways (Valuation for Rating) Act, as adapted by the London Passenger Transport (Valuation for Rating) Scheme and Order, 1935, and by the apportionment scheme which was approved by the Minister of Health on April 10, 1937. The first roll operates from April 1, 1936, and applies to the "transport undertaking," i.e. to railways, tramways, and trolleybuses but not to motorbuses and road coaches. Under the provisions of the apportionment scheme the traffic net annual value of the board's transport undertaking is divided into railway traffic net annual value, and tramway traffic net annual value. Railway traffic net annual value has then to be subdivided into passengers and goods. Precise allocation to the various forms of transport of considerable sums representing administrative and other general charges referable to the board's activities as a whole has proved very difficult, and in the second part of the report by the assessment authority for the year ended March 31, 1939, it is stated that the endeavour to reach during that period a final settlement of the average net receipts of the transport undertaking for the two years ended June 30, 1935, has not yet proved successful.

* * *

H. G. Drury: A Living Link with 1839

Probably for the first time in the history of THE RAILWAY GAZETTE and its constituent papers it is our pleasurable duty to extend hearty congratulations to a railway officer who has lived for five score years. Mr. H. G. Drury, M.V.O., who was born on September 16, 1839, is happily with us still and thus provides in his own person a living railway link of a century's span. On Saturday last he celebrated his hundredth birthday at his home in Northwood, Middlesex, with members of his family, and although badly lamed as the result of an accident some time ago, his general health is good. A working life devoted to the railway service culminated in his appointment in 1897 as Superintendent of the Line of the old Great Eastern Railway. Mr. Drury's principle was that the timetable represented a contract with the public and should be meticulously observed. It therefore became a well-known characteristic of the Great Eastern during his *régime* that one could almost set one's watch by the trains, so punctual were they. Mr. Drury was strict in ensuring observance of his rules, but his humanity and justice made him as popular with the staff as he was respected by them. He retired in 1904 and was elected a member of the Retired Railway Officers' Society as long ago as 1905; he was Chairman of that society during the years 1911-1913.

* * *

W. Tetley Stephenson

The retirement of Mr. W. Tetley Stephenson, Head of the Department of Transport, London School of Economics, severs another link with the North Eastern Railway and the days of Sir George Gibb's managership. Mr. Stephenson was one of a number of university graduates whose intended careers were changed by the decision of Sir George Gibb to engage (probably for the first time in British railway history) able young university men with good degrees. Sir Ralph Wedgwood, the first Chief General Manager, had a brilliant career at Trinity College, Cambridge, and the old North Eastern practice of recruiting graduates has been followed ever since to a certain degree first by that company and since group-

ing by the London & North Eastern. After eight years with the railway, Mr. Stephenson joined the London School of Economics to assist Sir William Acworth in extending the syllabus of lectures he had already started. Many railwaymen now occupying high executive positions, including the present Chief General Manager of the L.N.E.R., have attended his lectures and profited by his unique combination of practical experience and academic responsibility. Mr. Stephenson was also responsible for starting the Railway Research Service, now a separate body run by the railways under the direction of Mr. C. E. R. Sherrington, and it is largely due to him that transport has become a recognised subject of the B.Sc. (Econ.) and B.Com. degrees of the University of London. Many of our readers who have benefited in the past by Mr. Stephenson's work will join us in wishing him a long and happy retirement.

Overseas Railway Traffics

For the present only a limited number of the British-owned railway companies operating in Argentina is publishing traffic returns, and consequently we are unable to give our usual fortnightly table in full. The Buenos Ayres & Pacific returns show the figures in Argentine currency, and in sterling at the rate of 16.12 pesos to the £, but the Central Argentine gives the results only in pesos. In our table the sterling figures for this company are also calculated approximately at 16.12 pesos to the £, and we give in addition traffics of two Brazilian railways.

	No. of Weekly Week Traffics	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
Buenos Ayres & Pacific	11th 74,628	+ 6,762	773,698	+ 27,790
Central Argentine	11th 131,405	+ 22,723	1,301,975	+ 232,977
Great Western of Brazil	36th 6,000	+ 700	284,400	+ 51,500
San Paulo	35th 29,167	- 4,773	1,098,944	- 61,010
Canadian Pacific	34th 953,000	+ 45,200	17,224,000	+ 311,800
Bombay, Baroda & Central India	23rd 208,800	- 15,975	3,712,575	- 75,525

On the Antofagasta (Chili) & Bolivia Railway the receipts for the 36th week of the present year amounted to £17,260, an increase of £6,570, but the aggregate to date shows a decrease of £78,260, at £473,950.

Transfer Trains

The well appointed fast running passenger trains on our main-line railways are almost as well known to the public as to the men who are responsible for their working. The regular running goods trains, although their mission in the economic order of things is no less important, do not, for obvious reasons, receive so much publicity. Among these freight services, not the least important are the "transfer trains," which perform the essential work of transport between the main line termini and the town goods stations. In the London area perhaps the most interesting of these transfer trains is the "Smithfield goods," which runs nightly between the main line goods station at Paddington and the Great Western Company's underground goods station at Smithfield, passing over the Metropolitan Line of the L.P.T.B. through Baker Street and Euston. For this underground section the G.W.R. in 1933 built 10 standard 0-6-0 tank engines modified to suit them for the special service. They have condenser gear operated by a lever in the cab, so that condensing can be brought into action as soon as the locomotive enters the tunnel section. Weir pumps are fitted to deal with the feed water when it becomes too hot for the injectors to function. In external appearance these locomotives differ from the standard G.W.R. pannier tank engines in having the front of the tanks arranged as panniers to allow free access to the motion and the rear as side tanks to obtain the necessary depth to ensure efficient con-

densation. The large condensing pipes are also, of course, a conspicuous feature. The "South Lambeth" is another Great Western transfer train, also remarkable in that it is the only G.W.R. goods train to run south of the Thames in the Metropolitan area.

Ceylon Government Railway

The Ceylon Government Railway in the financial year ended September 30, 1938, showed an advance of 14.24 per cent. in passenger numbers, although the passenger receipts were only 1.96 per cent. up. Cheaper fares and improved services stimulated the growth of traffic. Merchandise receipts were down 4.16 per cent. notwithstanding a rise of 1.23 per cent. in tonnage. The advance of 7.68 per cent. in ordinary working expenses was due mainly to increased maintenance and repair work, the higher price of coal, and more pension payments.

	1936-37	1937-38
Miles open	951	951
Passengers	9,505,658	10,859,072
Merchandise, tons	896,098	907,116
Train-miles	4,253,227	4,510,019
Operating ratio, per cent.	114.82	124.99
	Rs.	Rs.
Passenger receipts	5,943,769	6,060,079
Merchandise receipts	8,624,370	8,266,012
Gross revenue	16,304,611	16,128,529
Ordinary working expenses	18,720,830	20,158,835
Renewals fund	1,634,213	109,226
Net deficit	4,050,432	4,139,532

Very promising results are being obtained from the three broad-gauge four-coach diesel trains which first went into service in March, 1938.

New Finish for Indian Railway Coaches

The current rolling stock building programme of the North Western Railway of India includes ten first and second class bogie composite coaches in which, as an experiment, a new type of finish is being employed. The material used is that known as Masonite, a special type of hard board manufactured from wood fibre. The advantages gained by using this material are that considerable economies can be effected in the exterior finish as the material is very easy to work and provides a good medium for the application of paint or Rexine. Hard boards have previously been used for interior finishing of ceilings and other portions of railway carriages, but this is the first time they have been applied to the exterior portions of coaches on a railway in India. The interiors of the vehicles have also been finished with Masonite, and covered in the first class with Rexine and in the second with Duco, and the general layout of the interiors is a complete departure from the ordinary. The larger first class compartments are fitted with revolving tables which can be drawn towards the seats and this it is believed will be much appreciated by the travelling public, particularly those who desire to use typewriters during long journeys. The coaches are designed for day and night service and the upper berth supports are of new design, making it possible to do away with the chain supports originally used in this connection, whilst the raising and lowering operations can be effected more easily.

High-Tensile Steel Cars in America

There has recently been completed for the Southern Railway of America an order for twenty-five 70-ft. express cars of a special type in which Mayari-R steel, having a minimum tensile strength of 70,000 lb., a yield point of 50,000 lb. per sq. in., and an endurance limit equal to the yield point, is largely used. Advantage has been

taken of the high corrosion-resisting powers of this material, which is considered to be about five or six times that of ordinary mild carbon steel, to effect a reduction in the thickness of the sections of the parts in which it is used. Among these parts are large sections of the underframe including the centre sills, the complete side construction including posts and plating, the end construction and the roof frame members. Other parts are manufactured of open-hearth copper-bearing steel. Three of the vehicles have large doors at one end for facilitating the conveyance of road motor vehicles. These doors, which have a thickness equal to the end wall construction and are thoroughly insulated, are each hung on four hinges and open outwards for the full inside width of the car. A regular end door is installed at the centre line of the large one and this opens inwards to allow the passage of the train staff. The flooring of the doorways is covered with anti-skid steel plates. The vehicles, 74 ft. 9 in. long and 9 ft. 9 in. wide, have a carrying capacity of about 30 (long) tons and weigh 51.3 (long) tons.

* * * *

Built-up Crank Axles

Although the size and power of modern multi-cylinder engines almost invariably calls for a high-tensile alloy steel crank axle, this material apparently has not given universal satisfaction. On the Belgian National Railways, nickel-chrome steel double-throw crank axles of monobloc construction in some cases began to show small cracks at the junction of the crankpins and webs after relatively low mileages. Thereafter, the axles were carefully inspected every 10,000 km. and when the fissure spread to 95 or 100 mm. on each pin the axle was withdrawn. A polybloc (5-piece) oblique axle was applied to the Class "1" four-cylinder Pacifics, and gave very satisfactory results. These engines had the crankwebs, of nickel-chrome steel, prolonged to form balance weights, which were set at the correct angle in order to obtain exact balancing; the other parts of the axle were of heat-treated carbon steel. Nevertheless, a good deal of care was needed to get the required fit and location of the oblique portion into the webs, and a further step has been made in the new two-cylinder streamlined Atlantics, by adopting a nine-piece axle with four straight-balanced webs of nickel-chrome steel; the cylindrical portions forming the axles are of heat-treated carbon steel. It is intended to make experiments with webs of chromemolybdenum steel.

* * * *

Silver into Copper

To those who are habitually short of coppers, the London Transport ticket-and-change machine is a blessing. With increased efficiency, however, the instrument has lost some of the geniality which characterised its earliest prototype at St. James's Park station. This, we recall, was a glass-fronted affair, inside which the user could watch his coins rolling merrily down a series of inclined planes, while all the time there was emitted a jovial jingling such as was only to be expected of a device continually being loaded with silver but not always yielding a corresponding sum in copper. In those days a fault could usually be rectified by striking the machine with the fist. To treat one of the silent modern creations in such a fashion would seem as sacrilegious as beating upon the front of an archbishop. On the other hand the machine can sometimes be deceived. A coin once austere rejected may be taken at a second attempt. We admit, however, that before trying it on we dive a hand ostentatiously into our pocket as if to select a new coin, more with the idea of hoodwinking the instrument than the vigilant ticket collector.

Poland and its Railways

BETWEEN the armistice of 1918 and the war of 1939, Poland had worked hard to create a railway system suited to her needs as an independent State. Her first obstacles were not only the damage done to the railways within her new frontiers during the 1914-19 war, but the fact that those railways had been operated by three administrations, each interested in its own territory rather than in intercommunication with its neighbours. As a result, Poland found many of her towns and industrial areas without reasonably direct rail links, to remedy which some 1,750 km. of new line were built and opened to traffic between 1918 and 1937. The situation and importance of these lines for internal and international communications are reviewed in an article on page 397. In 1772, the "Polish Commonwealth," as it was then called, extended over an area of about 286,000 sq. miles, but by the end of the eighteenth century Poland had ceased to be an independent State, having been divided among Prussia, Russia, and Austria by the partitions of 1772, 1793, and 1795. In 1807 Napoleon formed a part of the old commonwealth into a semi-independent State under the title of the Duchy of Warsaw, but in 1815, at the Congress of Vienna, this was undone and Poland was re-partitioned between Prussia, Austria, and Russia, except the small district of Krakow, which was constituted an independent republic and remained such until 1835, when it was annexed by Austria, despite a guarantee of neutrality by the three partitioning powers.

Poland has never been a political entity, therefore, at any time during the railway era, and her railway systems were developed as parts of the undertakings of the three owning Powers. At the outbreak of war in 1914, only one portion of Poland enjoyed autonomous government, namely, the Austrian section, which was governed by the Galician Diet at Lwow (Lemberg) under the control of the Central Government in Vienna. All the main railways in the Prussian and Austrian sections were built to the standard 4 ft. 8½ in. gauge, and those in the Russian section were chiefly of 5-ft. gauge, except the standard-gauge Warsaw-Vienna Railway, which until the beginning of 1912 belonged to a private company. During the war of 1914-1919, Russian Poland was invaded by German and Austrian troops, and by the end of 1915 the whole country was occupied by these forces. On November 5, 1916, the German and Austrian Emperors, in a joint manifesto, proclaimed the independence of Poland, but neither the boundary nor the constitution of the State was defined. Many of the railways in the Russian section were converted to standard gauge, however, on strategic grounds. On November 9, 1918, the Republic of Poland was proclaimed at Warsaw, and at first consisted of the former Russian or Congress Poland (that is, Poland as delimited and handed over to Russia in 1815 by the Congress of Vienna) together with Western Galicia, an Austrian Province. On December 27 the German district of Posenania was incorporated. The western frontiers were determined by the Treaty of Versailles of June 28, 1919. In the same year hostilities broke out between Poland and Soviet Russia, and, after initial successes, the Bolshevik armies in August, 1920, appeared likely to deal a crushing blow at Polish independence, the capital, Warsaw, being in imminent danger of capture. A dramatic counter-attack by Polish troops reversed the position and enabled Poland to conclude peace on favourable terms. In 1919-20 the 5-ft. gauge lines were converted to standard, but portions were constantly changed from one to the other as the Polish armies advanced or retreated. Poland's eastern boundaries were fixed by the Treaty of Riga on March 18, 1921. Other additions have been Upper Silesia in June, 1922; the Vilna territory (in dispute with Lithuania from 1920 to 1938);

and the Teschen district, taken from Czecho-Slovakia in October, 1938.

The necessity for the new Poland to construct direct rail links may be gauged from the mileage saved on journeys between important centres. The first cut-off opened, for example, was that between Kutno and Strzałkowo in 1921, reducing the Warsaw—Poznan (Posen) journey from its old distance, *via* Torun (Thorn), of 250 km. to 178 km. Later, two new sections of railway, totalling about 154 km. were opened at each end of the north-south route from Warsaw to Krakow, and together saved 44 km. between those cities compared with the former route *via* Czeszochowa. Apart from the junction line between the new East and the Central stations in Warsaw, all the major cut-offs have been completed except for that between Lublin and Belzec, estimated to cut the time between Warsaw and Lwow by two hours. At least one new Polish railway was regarded some years ago as a likely source of contention in a country whose frontiers were in dispute. This was the Silesia—Gdynia line, running from the coalfields of the Katowice area, through the "Corridor," to the Baltic coast. A commentator in 1937 saw it as a strategic line capable of bringing support in the form of munitions or otherwise from Czecho-Slovakia into Poland, and dwelt upon the fact that it had been completed by a French company under a concession from the Polish Government. Events have, of course, nullified such a purpose, had it ever been intended, and the isolation of Poland from her allies is one of the most perplexing elements in the present war to the ordinary observer. However that may be, from the commercial point of view the Katowice—Gdynia line saved 60 miles on the old route from Silesia to the sea at Danzig, and was situated entirely within Polish territory. During the last war, railways to the east of the Warsaw—Lublin—Lwow line suffered most heavily. In that area 80 per cent. of the bridges and 539 out of the total of 910 stations were destroyed. The work of reconstruction should not be overlooked in favour of the new building, and itself contributed to improved facilities because the opportunity was taken of relaying with heavier permanent way and strengthening bridges. Nothing like finality has been reached in the railway development of a country which in circumstances other than the present would have been a field for progressive development and experiment in the engineering, administrative, and commercial fields.

* * * *

American Railways and the War

COMPARING the condition of the American railways today and at the outbreak of war in 1914, our American contemporary, the *Railway Age*, makes the dramatic assertion that they would have to replace about 20,000 existing locomotives and more than 900,000 freight cars with new ones if they were to be restored to the age condition which existed 25 years ago. The last war brought an increase of 19 per cent. in railroad freight traffic, even before the U.S.A. entered the war, and the participation of that country in the conflict brought a 40 per cent. traffic rise. Assuming that the increase of traffic would be no greater than during the last war, our contemporary analyses their present state of unpreparedness and takes the year 1936, when revenue ton-miles were almost exactly the same as in 1916, immediately before the entry of the U.S.A. into the war (approximately 340 billions in each year). Experience of 1936 showed that even under modern methods of operation, the supply of wagons in a serviceable condition was barely sufficient to meet requirements; yet the freight car inventory at the end of 1938 showed a deficiency of 3,000,000 tons (equivalent to about 75,000

wagons) as compared with 1936. Leaving the question of the adequacy of the equipment out of account, it is therefore concluded that a war in Europe, even without America's participation, would make the acquisition of some 75,000 new freight cars an immediate necessity. Should the U.S.A. be drawn into the war, the railways could scarcely expect to have to handle less than 405 billion revenue ton-miles, the amount actually handled in 1918. With the best utilisation of locomotives and freight cars which the railways have achieved in recent years, each million lb. of locomotive tractive effort has to produce 175,000,000 revenue ton-miles. At that rate the total of 2,310,000,000 lb. of tractive effort, or 181,000,000 lb. more than the railways now have, would be required to handle traffic equivalent to that of 1918. Translated into locomotives of 75,000 lb. tractive effort each, this means that the railroads would need over 2,400 new locomotives merely to give them the required capacity. A similar calculation shows that 300,000 new 40-ton freight cars would be necessary. Road lorry competition, it is considered, would not relieve the railroads of any part of their problem, but would rather make it more serious because under war conditions a large part of the traffic now being carried by road would probably be dumped back on the railways. This picture is not, in fact, quite so gloomy as it is painted, for improved methods of operation and higher efficiency of locomotives today as compared with 25 years ago, has raised the efficiency of transportation so that fewer locomotives can now handle considerably more than then, and at a much higher speed. Further, the vast increase in road transport facilities has added no negligible quota to the power of movement in the States, and its very elasticity adds to its usefulness in emergency. Since our contemporary's article appeared Mr. Jesse Jones, Chairman of the U.S.A. Reconstruction Finance Corporation, has announced (on September 18) that a railway equipment and repair programme was being considered involving between \$50,000,000 and \$75,000,000 (£10,000,000 and £15,000,000).

Letter to the Editor

(The Editor is not responsible for the opinions of correspondents)

Gradients

United University Club,
1, Suffolk Street, S.W.1

September 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Since writing to you with regard to variation in gradients I have seen in the September issue of *Discovery* an article on earth movements which seems material to the subject. The article points out, amongst other things, that northern Sweden is rising at the rate of a foot in twenty-five years while southern Sweden is sinking rapidly; that the Alps are moving northward on a front of three hundred miles and are crushing down the lands in their path, while the Himalayas are making a similar advance to the south; and that if present tendencies continue unchecked the whole of Great Britain will have disappeared beneath the sea in little more than a million years.

As to your comments on my letter, published in THE RAILWAY GAZETTE of September 1, it is true that Ryhope and Relly Mill are in mining areas, but the other line runs through an agricultural district many miles from the nearest colliery. And no one could suggest that the change of gradient, for example, through Kilsby tunnel, has been due to mining subsidence.

It is interesting to note that there is a corresponding uncertainty with regard to the height of railway summits, for many of which different authorities give different figures.

Yours faithfully,

W. B. THOMPSON

THE SCRAP HEAP

MINISTRY OF FOOD

CONTROLS

Bacon, hams, and lard
Fish
Imported eggs
Food transport
Cold storage
Meat and livestock
Margarine
Dried fruits
Feedingstuffs
Cereals and cereal products
Flour and provender
Canned meat (imported)
Tea
Eggs
Sugar
Oilseeds
Vegetable oils
Animal oils and fats.

MINISTRY OF SUPPLY

RAW MATERIALS CONTROLS

Aluminium
Hemp
Flax
Iron and steel
Jute
Hides, skins, and leather
Molasses, industrial alcohol, and solvents
Non-ferrous metals (lead, zinc, tin, and copper)
Paper
Silk and rayon
Sulphuric acid
Sulphate of ammonia
Other fertilisers
Timber
Wool

FILLING UP FORMS

Sir Alfred Herbert (Chairman of Alfred Herbert Limited, Machine Tool Maker of Coventry), in a letter to *The Times* of September 19, wrote:—

Under the Government control which is now being imposed on every activity of our lives a large part of the national effort is being diverted from its essential work to the filling up of forms of harassing complexity and full of questions which are often totally irrelevant.

When a Government department takes control of an industry the first thing that usually happens is a state of hopeless confusion and delay pending the issue of forms. Doubtless some forms are ultimately necessary, but may I plead for broad instructions of policy to be issued first of all, so that mass effort may be guided in the right direction pending the setting up of such more detailed control as may afterwards appear desirable.

When a form is compiled it should be made as simple as possible and free from every question which cannot be answered readily by the average business man. It should be remembered that no statistics are of any value unless they form a basis for useful action. Will the average Civil servant remember that his besetting sin is to

preoccupy himself so fully with the individual trees that he is apt to lose sight of the wood?

QUESTIONS IN PARLIAMENT

Mr. Harry Day, Labour M.P. for Southwark Central, who died on his 59th birthday, September 16, made his reputation in Parliament on the prolific number of questions he asked on a multitude of subjects. There was scarcely a topic upon which his Parliamentary curiosity was not aroused. More than once he headed the list giving the number of questions put by individual members in a session, and between February 2, 1926, and August 4, 1926, his total was 879.

TREVITHICK

Some of the oft-told stories of the early days of railways and locomotives are known to hundreds of persons, of whom very few have any idea of the origin or authenticity of the alleged incident. We were particularly interested, therefore, to receive from one of our readers a copy of a famous Trevithick incident as told in a scarce little cr. 8vo. volume of 60 pages entitled "Original Cornish Ballads . . . to which are appended some Drafts of Kindred Character from the portfolio of the Editress; the whole prefixed by an Introductory Essay on the peculiar characteristics of the Cornish Peasantry from the Gifted Pen of Mrs. Miles." Printed and published by T. Whitehorn, Penryn, 1846, one of the "drafts of kindred character" is as follows:—

"The honour of the invention, which in the present age, promises to effect the phenomenon of annihilating distance, belongs to the town of Cam-

borne, in the Western part of Cornwall, and, it was in that town that the first trial of the engine was made by its original inventors, Captain Andrew Vivian and Captain Trevithick. Desirous of extending the benefits of this novel application of steam-power, the inventors contemplated its exhibition in the Metropolis, and in furtherance of this view, set out with the Locomotive to Plymouth, whence a sea-captain, named Vivian, was to convey it in his vessel to town.

"On this journey, whilst the vehicle was at the top of its speed, and had just carried away a portion of the rails of a gentleman's garden, Captain Andrew descried, a-head of them, a closed Toll-gate, and called out to Captain Trevithick, who was behind, to slacken speed. He immediately let off the steam, but the momentum was so great that the carriage proceeded some distance, coming dead up, however, just on the right side of the gate, which was opened like lightning by the Toll-keeper. "What have us got to pay here?" asked Captain Andrew. The poor man trembling in every limb, his teeth chattering in his head, essayed a reply: "Na, na, na, na." "What have us got to pay here, I say?" "Na, noth, noth, nothing to pay! My de-dear Mr. Devil, do drive on as fast as ever you can! Nothing to pay, Sir! nothing to pay!"

"The authenticity of this amusing incident may be relied upon; it was related to the writer by a descendant of one of the inventors of the locomotive; and, surely, a more excusable instance of superstition could not be adduced than that of terrified Toll-keeper."

Mr. Arthur Reginald Trevithick, grandson of the famous Cornish pioneer engineer, died on September 14, and an obituary notice appears on page 407.



"The Paper War," a German cartoon (reproduced from "The Sunday Times") published in Berlin before the outbreak of war. The five subsequent leaflet raids over Germany by British aircraft have made this cartoon almost prophetic

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

INDIA

Supply of Electricity at Jamalpur Workshops

The Congress Government of Bihar has under consideration a project for the generation of electrical energy on a province-wide basis. The scheme is designed to provide electricity at a cheap rate to rural areas and to promote the industrial and irrigational development of the province. A detailed survey, it is understood, was ordered some time ago for the construction of a transmission line from Patna to Jamalpur in the expectation that the East Indian Railway might be induced to obtain their requirements of electrical energy for the Jamalpur workshops from the Government. The appointment of the necessary staff to carry out the survey was under consideration when the Minister for Finance and Public Works came to Calcutta recently with some of his officers to confer with the East Indian Railway authorities on the subject. It is understood that no agreement was reached at this conference and that subsequent negotiations have fallen through. It has to be borne in mind that the railway has an excellent power plant of its own at Jamalpur, the efficiency and capacity of which have, probably, been further improved by the extensive reorganisation and expansion of the workshops effected in recent years. The railway administration must have carefully weighed the financial and other considerations involved in the Government scheme against the advantages of a power system of its own that has worked smoothly for years past.

Amortisation of Railway Debt

The Public Accounts Committee of the Central Legislatures is holding its annual examination in Simla of the appropriation accounts of the various departments of the Central Government. During the scrutiny of the accounts relating to the Finance Department, the committee discussed the adequacy of the provision of Rs. 3 crores each year in the central budget for the reduction or avoidance of debt and recommend that the Finance Department should examine whether there should not be a separate provision for the amortisation of railway debt.

Jaipur State Railway

The report of the working of the Jaipur State Railway during the year 1937-38 shows that the gross earnings increased by Rs. 15,831 to Rs. 13,35,575. A substantial reduction in the working expenses to just over Rs. 8 lakhs enabled this small railway in an Indian State to earn a return of Rs. 5,33,317 on a total capital outlay of Rs. 94,99,000. During the year

the Durbar adopted a five-year programme of development which includes track renewal, rolling stock equipment, and new construction. It is proposed to relay 71 miles of permanent way during the current year. The failure of the monsoon in 1938 brought into prominence the pressing need for adequate communications, without which relief measures were greatly hampered. The Durbar, therefore, authorised the Railway Department to take up two schemes of new construction. The first is an extension from Jhunjhunu to Loharu, a distance of 36 miles, estimated to cost Rs. 21 lakhs, and the second is for a new line from Sikar to Bissau, a distance of about 50 miles, estimated to cost Rs. 26 lakhs. Both schemes are well in hand with prospects of completion in the present financial year or early in the next. Twelve new locomotives are to be purchased during the next four years at the rate of three in each year.

Hardinge Bridge Protection Works

The Minister for Works and Communications in Bengal, accompanied by the Chief Engineer, Irrigation, recently visited Paksey where the Deputy Chief Engineer, Eastern Bengal Railway, joined him for an inspection of the Hardinge bridge and the various protective works undertaken by the railway. The Minister was keenly interested in the question whether the openings of the bridge were sufficient to keep the flow of the river unimpeded during high flood. The party watched the demonstration of the automatic recording of the depth of the river. The working of the apparatus by which the velocity of the current is measured also evoked much interest.

Chamrajnagar-Satyamangalam Railway

A plea for the early construction of a railway from Chamrajnagar in Mysore State to Satyamangalam in British Indian territory was made by the Mysore Chamber of Commerce before Sir Guthrie Russell, Chief Commissioner of Railways, when the latter visited Bangalore in the course of his monsoon tour. The Chief Commissioner is reported to have explained to the chamber that the scheme could not be taken up without a careful scrutiny of its financial implications. The work involved an outlay of nearly a crore of rupees (£750,000), and as the larger section of the railway proposed lay in British India, the Government of India naturally desired to be satisfied that it would be remunerative. Traffic and engineering surveys had been ordered to be carried out by the South Indian and the Mysore State Railways, and, if the examination of the survey reports showed that the expenditure of a large sum of money was justified, the Rail-

way Board would sanction the extension.

SOUTH AFRICA

Traffic Records

For the first time in the history of the South African Railways, truck loadings for a period of one week exceeded 80,000. The loadings—expressed in short trucks—aggregated 80,049 as against the previous record of 79,505; compared with the corresponding period of the previous year there was an increase of 6,997. A second record was also recently established when 208,352 tons of coal were railed from Transvaal collieries in one week, the previous highest figure having been 203,635 tons for the week ended May 29, 1938.

Native Traffic

An interesting feature of the Witwatersrand passenger train service is the large extent to which it is patronised by natives. As far as Johannesburg is concerned, the greater part of the large native element lives outside the city boundaries and the majority of the population has to be transported by rail to and from work in the city. During the early morning peak period between 6 and 8 o'clock some 12,000 natives travel daily into the city, and these natives, together with others who have arrived later during the day have to be transported back to their homes between the hours of 5 p.m. and 7 p.m. when native passenger traffic is at its heaviest. A heavy traffic also emanates from the mine compounds situated along the Reef, housing thousands of natives recruited from the Native Territories. To these natives, train travel is a novelty and represents one of their favourite forms of Sunday recreation. The popularity of train travel among natives in the Witwatersrand area is indicated by the following particulars of the number of passenger journeys performed by natives during the past few years:—

	Passenger journeys
1935-36	13,077,850
1936-37	15,329,423
1937-38	17,408,790
1938-39	21,478,680

Maize Crop Estimate

According to the latest official estimate, the 1939 maize crop in the Union will amount to 28,325,000 bags, which not only represent an anticipated advance of over 9,000,000 bags on the previous year's harvest but will also be a record crop. The anticipated increased production is ascribable to more favourable agricultural conditions.

Cape Eastern Main Line Improvements

The heavier part of the work upon the Cape Eastern main line improvements is now being undertaken, particularly between Blaney and Imvani. Heavy deviation works and a new Blaney junction, two miles south of

the existing station, are involved. Between Blaney and Amabele the deviations are comparatively short, but beyond the latter station an entirely new alignment is being followed to Imvani, and is practically a length of new construction. In consequence, new stations have to be built at Stutterheim, Toise River, Thomas River, Cathcart, Waku, and Imvani.

Very heavy earthworks are entailed near Dohne and Greytown Forest Reserve—where two tunnels are necessary—and a high bridge has to be built over the Toise River. Two more tunnels and further heavy earthworks are unavoidable beyond Thomas River, and the same remarks apply to Hobbs Hill, beyond Cathcart, except that only one tunnel is involved.

Advantages Secured

The realignment will secure a 1 in 50 ruling gradient, compensated for curvature, as compared with the 1 in 40 uncompensated—equivalent to about 1 in 33 compensated—on the existing line. Curvature is also being drastically reduced, the former 330-ft. radius sharpest curves being replaced by nothing sharper than 716-ft., and only a few of these will be necessary. The most striking improvement is, perhaps, the reduction in the length of the line, a saving of no fewer than 16.2 miles being effected by the realignment. The total vertical rise and fall will also be reduced by 920 ft.

Work is at present in hand upon two of the tunnels, one 320 yd. and the other 856 yd. in length. It is being done departmentally, and mechanical loaders and scrapers are being used for removing the rock after blasting.

WESTERN AUSTRALIA

Improvements at Northam

Situated 66 miles from Perth on the main eastern railway, Northam is the central depot through which all traffic to and from the eastern and Murchison goldfields and the eastern and north-eastern wheatbelt passes, and in consequence of its being the starting point for numerous branch line services, a considerable amount of marshalling work is carried out there. East Northam, two miles beyond the main depot, is the actual junction between the branch and main lines, but Northam itself is the depot at which all the branch line trains start and terminate. In the wheat season particularly, there is a heavy concentration of goods traffic at Northam, into which place the wheat flows from the various agricultural districts in the vicinity and is taken on to the port by the heavier main-line trains. The line from Northam to the port of Fremantle was duplicated some years ago, but from Northam onwards a single line of track carried the whole of the traffic, and by reason of heavy grades on this short section, working costs were high and delays frequent due to waiting for line clear. The position was accentuated

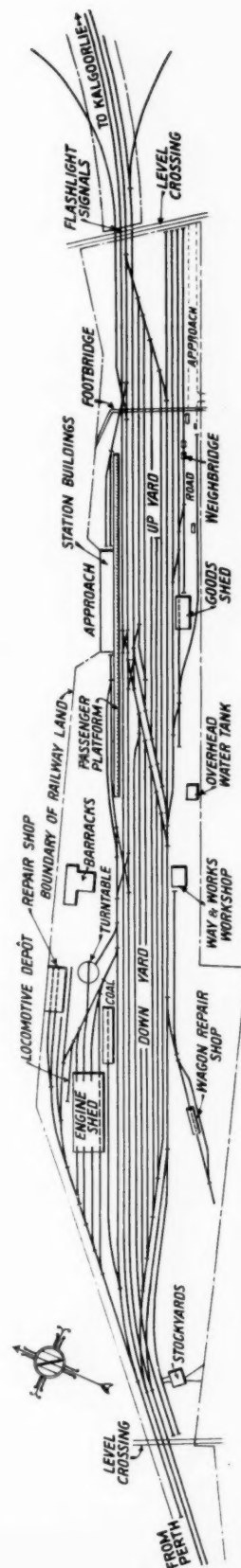
by sidings to the Northam flour mill and the oil companies' depots being worked off the main line.

Northam—East Northam Doubling

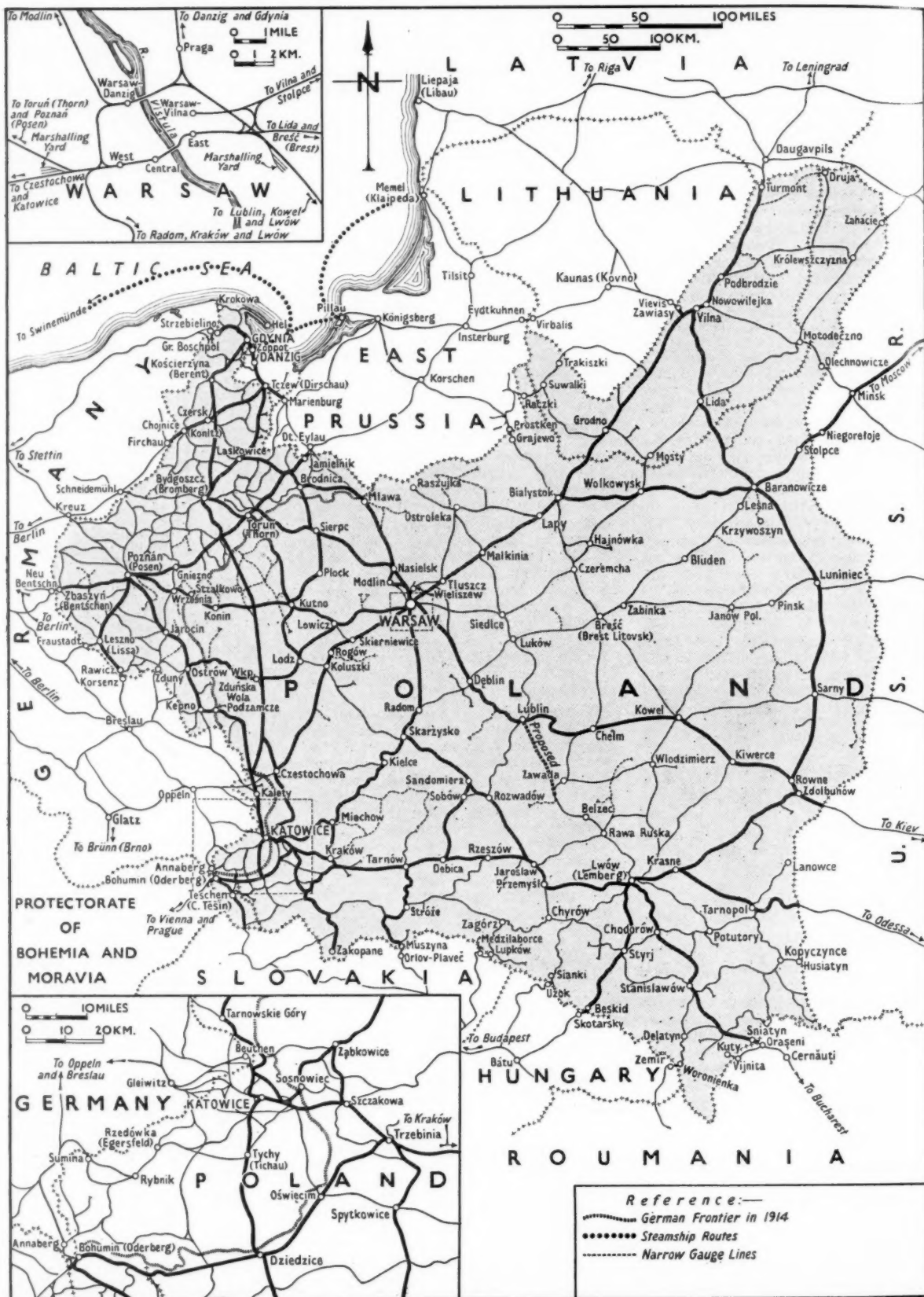
To secure relief in this connection, and also to provide suitable work for the relief of unemployment, approval was given in 1938 for the duplication of the Northam—East Northam section, and the work has now been completed at a cost of approximately £29,000. The track has been laid with 80-lb. rails, metal ballasted, and a grade of 1 in 80 on the down journey on the duplicated line between Northam and East Northam has been effected in lieu of the previous grade of 1 in 60, while the old road in the up direction has been regraded and the grade reduced from 1 in 73 to 1 in 140. To relieve further the congestion on the main line, two separate sidings have been put in direct from the Northam yard to serve the flour mill and the oil depots. A feature of this duplication was the flashing light signalling of several level crossings between Northam and East Northam. For the whole of the distance between the two stations the railway line divides the township, and cross-railway communication is by means of level crossings. While the single line was in existence the ordinary crossing warnings were considered sufficient, but with double-line working it was decided that better safety provision was essential, and electric flashing light signals of a similar design to those installed at a number of important crossings in the metropolitan area have been installed.

Remodelling of Northam Yard

The Northam yard, by reason of its geographical position, is one of the most important country depots in the state, and it has been realised for some time that the facilities there for the handling of the heavy volume of through traffic were not conducive to the most efficient operation. In conjunction, therefore, with the duplication of the track to East Northam, a complete rearrangement of the Northam yard was undertaken at a cost of approximately £6,000. This work is now complete, and already the benefits of the improved working have become apparent. In the rearrangement, enlarged up and down yards have been provided. Further, sidings to accommodate 70 four-wheel wagons have been provided, as a result of which trains of maximum length can be placed in a siding and the engine immediately released for locomotive purposes, whereas previously with a long train it was frequently necessary to divide the train and place a portion of the load in an adjacent siding, such work being done by the train engine. The full benefits of the duplication and regrading to East Northam and the rearrangement of the yard should be apparent during the coming wheat season, when under normal conditions the available facilities throughout the system will be fully taxed in the transport of the harvest.



Sketch plan of Northam yard, Western Australia, as remodelled



Railway map of Poland showing connections with neighbouring countries

THE POLISH RAILWAY SYSTEM

Creation of a unified national system out of the legacies of the period of partition

IN the years since the 1914-19 war Poland had been actively engaged in creating a unified railway system out of its loosely-knit legacy from Prussia, Austria, and Russia. Not only had those three administrations built for their individual convenience rather than to provide the most direct connections between cities in all parts of Poland, but by 1918 their lines and equipment were in an extreme state of disrepair. Further, some of the Russian lines were on the 5-ft. standard gauge of that country (except the standard-gauge Warsaw—Vienna line) and had to be converted to the normal European 4 ft. 8½ in. gauge. Some idea of the railway destruction in certain parts of the country may be gained from the facts that, to the east of the Warsaw—Lublin—Lwów line, 2,500 or 80 per cent. of the bridges (totalling 39 km. in length) were ruined, and 539 out of the 910 railway stations were destroyed. In the distribution of rolling stock under the Peace Treaties, Poland was allotted 4,762 locomotives, 10,379 passenger carriages, and 111,092 goods wagons. At first, new rolling stock was bought abroad, but later it was built exclusively in Polish workshops, and by 1931 these had begun to export.

The task of unification and repair was entrusted after the armistice to a specially-created Polish Ministry of Railways, which on completing the groundwork of its task was reorganised as the Ministry of Communications. By a Decree of March 17, 1927, Polish industry was placed under the control of the State, but the railways were given an autonomous and commercial administration of their own, subject to the surveillance of the Ministry of Communications. This new status was formally recognised by a Law of September 29, 1930, under which the Minister of Communications, as General Manager of the Polish State Railways (Polskich Kolei Państwowych, or P.K.P. for short) appointed a committee of management empowered to act in his name. The railway budget is thus distinct from the national budget.

New Lines

Apart from the work of repairing bridges, stations, permanent way, and equipment generally, an early beginning was made with new construction to provide direct rail links between cities formerly awkwardly placed for intercommunication through being situated in independently administered territories. The desire now was to improve connections for transit traffic and to profit by the outlet to the sea for the coal-producing and industrial regions of Silesia provided under the Treaty of Versailles. In 1921 a new line of 111 km. was opened between Strzalkowo and Kutno, providing for the first time a practically straight route from Warsaw to Poznań (Posen) and much improving the international communications between Western Europe, Poland, and Russia. Another important opening was that of the Kalety—Podzamcze line (115 km.) in 1926, permitting communication from Katowice to Western Poland without using a section of the German State Railway. At this time work was beginning on a more extensive enterprise—a direct link, avoiding Danzig and thus entirely within Polish territory, from the new Polish port of Gdynia on the Baltic to the industrial and coal-bearing regions of Upper Silesia, which shortens by 150 km. the distance between Gdynia and Katowice and avoids the former detour *via* Poznań or Kutno. By 1930 there had been completed, in the north 172 km. of the 185-km. Gdynia—Bydgoszcz (Bromberg) section, and in the south the whole of the 102 km. between Herby (near Kalety) and

Zdunska Wola. Financial difficulties then caused the Polish Government to approach France for a loan to complete the work, and by a Law of April 27, 1931, the concession for finishing and ultimately working the line was granted to a group formed with the approval of the French Government and entitled the Franco-Polish Railways Company. Under this arrangement constructional work proceeded apace and the line was opened throughout on March 1, 1933. It was worked by the Polish State Railways until February 22, 1938, when the company took over the working with 120 locomotives. Further improvement in north-south communication was realised in October, 1934, when new sections opened from Warsaw to Radom, and Miechów to Kraków shortened the Warsaw—Kraków journey by 44 km.

In 1936 there were some more openings of short sections of railway with considerable importance to through traffic, this time in the east-west direction. A short link from Tłuszcz to Wieliszew connected the main lines to Eastern Poland and Russia with those to Danzig and Gdynia without passing through Warsaw, and a new line from Nasielsk to Sierpc provided a more direct route from Warsaw to Toruń (Thorn), the capital of Pomerania. From Sierpc a line was also opened southwards to the Vistula port of Płock, completing a new direct route from Łódź to Gdynia. Another important main-line scheme contemplated at the same period, but not executed, was to improve communications from Warsaw to Lwów by a direct connection from Lublin to Bełzec (142 km.). This would have shortened the Warsaw—Lwów journey by two hours and have been an important contribution to the rail route from the Baltic to the Black Sea *via* Roumania.

Railways in Warsaw

In addition to the foregoing works throughout the country, electrification of 140 miles of suburban railways in the Warsaw area was undertaken in 1934 by English electrical contractors, and the scheme also provided for a direct line between the Central and East stations, crossing the Vistula by a new bridge. It has therefore been necessary to rebuild the Central station with the platforms below street level, whence trains arriving from the south and west could proceed in tunnel to gain the bridge and the reconstructed East station, instead of reversing and running round the so-called inner circle as hitherto. The Warsaw suburban electrification was completed in 1937.

Along with their policy of improving communications by building new lines and cut-offs, and by doubling and strengthening, the Polish railways from 1933 onwards took vigorous steps to promote pleasure travel. Tourist trains were run to the Carpathian winter sports regions, equipped with vehicles fitted up for dancing and other recreations, and with sleeping cars. Their popularity having been established, a more extensive train cruise was inaugurated, visiting Germany, Belgium, France, Italy, and Austria. International excursions were also organised, bringing many visitors from German Silesia to the Carpathians, and from East Prussia to important sporting festivals in Warsaw. Considerable attention has been given to railcar operation and approximately 100 diesel cars were in traffic, some of them in express interurban services with top speeds up to 75 m.p.h. A big new programme, in which the construction of 250 to 300 cars was envisaged, was in hand when war broke out.

In the construction of rolling stock, the Polish State

Railways have adopted the principle of arranging their main line corridor stock so that it can be converted to form *couchettes* or sleeping berths for night travel. Generally the highest standards of Continental construction have been incorporated, and nothing but all-steel stock has been built for passenger service. A feature of long-distance trains is their equipment with wireless, earphones being available for hire by passengers. The compressed-air type of brake has been standardised, and, as a result of a large contract placed in 1934 with the British Westinghouse Company, all goods trains were due to have been completely equipped with this brake by next year. For main-line passenger services, 4-6-0 locomotives have been built in large numbers and 4-8-0, 4-8-2, 2-8-2, and 4-6-2 locomotives have also been built for the heaviest and fastest duties. For local services a handy 2-6-2 design of tank engine has been standardised. A powerful and specially flexible type of 2-10-2 tank locomotive is also to be found in use on heavy and sharply curved lines, such as that connecting Krakow with the popular mountain resort of Zakopane in the Carpathians, where grades of 1 in 40 and 100-metre curves are numerous.

The creation of the Polish State had an important effect upon international train services. The new German-Polish frontier severed no fewer than 23 railways, the services on which were closed down in the frontier regions, and comparatively few through services were retained between the two countries. Connection between Germany and its province of East Prussia was, however, maintained by two principal railway routes across the Polish Corridor, but much of the traffic was conveyed by sea from Swinemünde to Zoppot (for the Free City of Danzig)

and Pillau (for Königsberg). The direct route from Berlin runs for some 60 miles between Firschau and Tczew (Dirschau) through the Corridor; a further 11 miles, from Tczew to Marienburg, lies in the territory of the Free City of Danzig. "Privileged" trains by this route between Germany and East Prussia are hauled by Polish locomotives across the Corridor, and passengers not holding Polish passports or visas are of course not allowed to alight in Polish territory. "Privileged" trains, similarly hauled, are also run from Berlin *via* Stettin, Gross Borschpol, Gdynia and Danzig, and join the main corridor route at Tczew. Clauses 89 and 98 of the Treaty of Versailles define the status of these "privileged" trains; a supplementary agreement of April 21, 1921, permitted the re-opening of a few other lines across the frontier. Some further relaxation was the subject of another agreement between Poland and Germany dated February 14, 1933. Sleeping cars (nearly all providing first, second and third class accommodation) and restaurant cars in Poland are run by the International Sleeping Car Company. Three sections of that company's Nord Express run through Poland; the Riga part *via* the Corridor and Königsberg, the Niegereleje (for Moscow) part *via* Posen and Warsaw, and the Bucarest part *via* Beuthen, Krakow, Lwow, and Czernowitz.

According to the latest information in the "Universal Directory of Railway Officials," the length of the Polish State Railways was 17,500 km. standard gauge, and 2,400 km. narrow gauge. The rolling stock consisted of 5,400 steam locomotives, 11,900 carriages, and 160,000 wagons. In addition, there was the railcar stock, and the electric locomotives and multiple-unit trains.

ADVERTISING IN WAR TIME

By PERCIVAL MARSHALL

Executive Chairman of the Periodical Trade Press
and Weekly Newspaper Proprietors' Association

IT is a remarkable thing that one of the most unexpected reactions on the outbreak of war should have come from those who we regard as level-headed business men. I refer to the widespread rush to stop advertising in both the periodical and the trade and technical press, which marked the first few days of the new *régime*. That rush soon showed signs of subsiding, and in a number of cases cancelled appropriations have been resumed, and even new business has been placed. This is common sense.

Presumably this panic was dictated mainly by a desire to effect an immediate economy in the conduct of business, and to cancel advertising contracts seemed such a simple way of saving money. Actually, this method of economising is a two-edged weapon which cuts both ways. The advertiser's name, and the goodwill of his particular product, which he has built up through years of intensive effort, disappears from the consumer's sight immediately. The buying public is left in the dark as to whether the advertiser and his goods are still in existence; his customers wonder whether he is loyally responding to the Prime Minister's definite request that all businesses should carry on, or whether he is on the point of fading out of the commercial picture.

By stopping his publicity the advertiser is in fact subjecting his business to a "black-out" in his particular market, a step backwards from which it may take a long time to recover. Business is bound to continue, and both private and general industrial requirements will need to be filled on a large scale. The demand for certain existing goods of special service will be intensified, and new demands of all kinds will arise to meet the new conditions.

To stop advertising is to cut yourself off from the market, and to say to the readers of the journals you use "Relations are suspended—we are no longer interested in you." The psychological effect of ignoring your buying public in this way may have far-reaching results. How much better to say to them, "We are carrying on—let us supply your needs." Members of the public at large will more than ever need appropriate reading material to divert thoughts from the tragedy of the war, and to occupy their minds and entertain them during the enforced "black-out" hours. The periodical and magazine press will supply this want effectively and will continue to give good publicity value.

So far as the trade and technical press is concerned, that two-edged weapon cuts another way. It inflicts injury on the journals which render such admirable service with vital news and important trade and technical information. These journals are themselves determined to carry on their service to industry. The stopping of your advertising can only diminish their resources for giving you that news and intelligence service which you must have, if you are to carry on yourself. Why not make common cause with them, and help yourself by helping them in these difficult times?

The press is out to give both readers and advertisers the fullest possible value, consistent with any official restrictions, and it is in your interest to co-operate in the fullest possible measure. Do not "black-out" your business from your market; rather let the searchlight of the buyer be focused upon it.

Above all, let your world know that you are following the lead of the Prime Minister, and loyally "carrying on."

ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

Twenty-five Years After

THE outbreak of two great wars, separated by an interval of exactly a quarter of a century, and fought between the same major Powers (Great Britain and France with Slav allies *versus* Germany and Austria), inevitably invites comparison between the methods of warfare available then and now. The fundamental difference is one of transport, and is associated almost entirely with the development of the internal-combustion engine both on land and in the air. In 1914 there was widespread fear of the invasion of these shores from the sea, and the London fleet of buses—then the only large group of such vehicles in the country—was earmarked for the conveyance of troops to strategic points on the coast. Today the risk is one of large-scale aerial attack, and the enormous fleets of buses now available in all parts of the country took no mean share in what was probably the greatest evacuation movement from large cities ever undertaken. In point of fact, the London buses of 1914 were not called upon to rush troops to the coast, but were themselves taken overseas to serve the western front. The London of July, 1914, had 3,431 buses at work, of which 3,071 were petrol-engined vehicles belonging to the L.G.O.C. and its associates. Most of the balance consisted of steam buses (now unknown), and of petrol-electric vehicles not favoured by the War Office for commandeering. In all, 1,319 L.G.O.C. vehicles went overseas, and 10,036 of its employees joined the Services. In addition, the company trained some 24,000 drivers for the mechanical transport services of the army. At the present time, with a mechanised army, it is difficult to realise that when we were 25 years younger it was the unique achievement of the L.G.O.C. to have a large fleet of heavy vehicles complete with trained drivers.

During the past year, the road transport which is such a large and important feature of daily life, has ably seconded and supplemented the railways in providing essential transport for the many "national preparedness" arrangements. A particularly striking example is provided by the railway-associated bus company serving the Salisbury district—Wilts & Dorset Motor Services Limited—which has experienced unprecedented expansion this summer, mainly by reason of the extensions of military establishments in the area. At the end of May it was operating 119 vehicles; by the first day of August (when a new bus station at Salisbury was brought into use) the total had grown by 94 to 213; and today it is about 230, or virtually double what it was three months ago. More than once in these columns in the past year, we have referred to the part played by road transport in the final distribution of air raid shelters, and on pages 401 to 403 of the present issue we outline some of the important events of the past month in the relations of road transport to the war.

Long-Distance Road Services in Central Europe

THE establishment this summer by the German State Railway of a bus service between Berlin and Munich (to which we referred at page 148 of our July issue) was an important step in the development of long-distance bus transport in Central Europe, and is worthy of more than passing notice, despite the fact that the outbreak of war has

destroyed its immediate significance. The Reichsbahn, in introducing this service was keeping pace with the development of the new *Reichautobahnen*, and the Berlin—Munich line was the first through bus route covering so long a distance as 373 miles; hitherto the longest single run had been only about 185 miles. The service had the further advantage of easing the problem created by the greatly increased railway traffic between Berlin and Munich which had made it necessary to curtail the special facilities afforded to excursion parties over the week-end. The two-unit Gaubschat vehicle had seats for 78 persons, and emergency seats that could accommodate 17 additional passengers. Until just before the beginning of hostilities, the Berlin—Munich service was working once a week, but it had been so planned as to afford the maximum number of connections both with the railway and with other bus services. Thus, its starting point in Berlin was at the Anhalter station, and in Munich at the Starnberg station; from the latter point passengers were enabled to make easy train connections to the Tyrol, and from Munich also passengers might continue by Reichsbahn bus to Tegernsee, Fischhausen, Reit im Winkel, Berchtesgaden, and Salzburg. In fact, by changing buses it was possible this summer to travel on German State Railway buses from Stettin, on the Baltic Sea, to the Alps. By making an over-night stop in Munich, considerably greater possibilities of long-distance road travel were afforded, as the German State Railway operated motor coaches daily, including Sundays, between Munich and Vienna, *via* Salzburg, Bad Ischl, Gmunden, Wels, Linz-Wegscheid, and St. Pölten. On this route the single fare was RM. 21.10, and 60 per cent. reduced-rate rail tickets between Berlin, Salzburg, Linz, and Vienna, were available for use on the buses without payment of a supplement. From Vienna there was a thrice-daily motor coach service to Budapest *via* Győr, of which the running time was 5 min. under 6 hr.

Rail-Road Co-ordination in India

ROAD competition continues to be a pressing problem on Indian Railways as affecting both passenger and goods traffic. The new Motor Vehicles Act passed by the Government of India is expected to ameliorate the position, but the effect of the regulation and control of motor transport envisaged in the Act cannot be gauged with any exactitude until the rules provided for in the Act are finally approved and forwarded to the Local Governments for adoption. Though, in the meantime, some Provincial Governments have adopted measures for the control of motor transport, the railways cannot afford to relax their efforts to retain the traffic to which they are entitled. Like those in other countries, the Indian railways have endeavoured to meet road competition by the acceleration of services, reduction in fares, and other remedial measures, but with little avail. The removal of legal difficulties which, until recently, restricted Indian railways from actually embarking upon road operation, have paved the way to the formulation of schemes of road-rail co-ordination. Encouraging results have been obtained from the North Western Railway venture in acquiring a substantial interest in a private company operating road services between Lyallpur and Jhang. On the South Indian Rail-

way, there are large tracts in the interior of the country difficult of access to a railhead, and consequently the produce of these areas has no proper outlet. The South Indian Railway after full investigation was impressed with the urgent need for transport facilities in such parts and has, as a beginning, introduced road services between Theni and Cumbum in the Madura district, and between Satyamangalam and Coimbatore. Forwarding and receiving offices under railway management have been opened at Cumbum and Chinnamanur, and at Satyamangalam. The services have been in operation since April last. As a facility to people in towns and villages located at a distance from the station serving them, the South Indian Railway has, from time to time, opened agencies at suitable stations to arrange for regular bus services to stations in connection with all trains. Combined bus and rail tickets between these agencies and certain important adjacent stations are available. Such agencies opened at Pudukkottai Town and Karaikudi a few years back proved so popular that the railway felt justified in extending this facility, and five new agencies have recently been opened in the Chettinad territory served by Tirumayam railway station.

Routine Diesel Maintenance in Australia

THE Metropolitan Omnibus Co. Ltd., which operates locally in the Perth district, Western Australia, and also on the 15-mile Perth—Fremantle route, includes in its fleet 20 diesel-engined Leyland Lion single-deck buses which are maintained on a strict mileage basis. Nozzles are cleaned every 3,000 miles and heads are removed and valves ground-in at 24,000 miles. At 48,000 miles, pistons are removed and new rings fitted. This procedure is repeated until the unit has done 144,000 miles, when it is taken down for a general overhaul. Almost without exception, the company has found the bearings to be in perfect condition after this mileage. Cylinder wear is about 0.015 in. to 0.018 in. at 144,000 miles. The engines are then rebored and fitted with 0.025-in. oversize pistons. This maintenance system has proved highly efficient, and has enabled the company to achieve very satisfactory average mileage figures. The petrol-engined buses in the fleet are subjected to generally similar treatment, but general overhaul is carried out after 110,000 miles, a figure which makes interesting comparison with the 144,000 miles of the diesels.

Overseas Notes

Motors Banned in Addis Ababa

It is reported that, from Monday, September 4, all private and commercial motor traffic was forbidden in Addis Ababa, the capital of Abyssinia.

Motor Transport in the U.S.S.R.

In a recent issue of the Soviet newspaper *Pravda*, it was stated that the number of road motor vehicles had increased from 118,000 in 1933 to 760,000 at the end of 1938.

New Luxury Trams for Cologne

Just before the outbreak of war, it was announced that sixty *de luxe* trams were to be introduced in Cologne in time for the opening of the International Transport Exhibition of 1940; they would, of course, continue in operation after the close of the exhibition in the autumn of 1940. These trams, which will be electrically heated, streamlined, and built with the maximum amount of window space, will have automatic signals announcing every stop and where the next one is to be. The seats are to be upholstered in leather with metal trimmings.

The Burma-Yunnan (China) Road

Modern facilities are rapidly taking shape along the new Burma-Yunnan road, which is now open from Lashio, the north-eastern railhead of the Burma Railways, to Kunming (Yunnan fu) the capital of the Province of Yunnan. Six hotels are being built, and petrol filling stations established at intervals; some of the former are expected to be open within the next few months. Passenger cars and lorries for merchandise will be available for the journey, and large numbers of the latter are already in Government service on this road.

Road Transport in Turkey

Road motor transport is relatively undeveloped in Turkey, according to the Report on Economic and Commercial Conditions in Turkey issued by the Department of Overseas Trade (H.M. Stationery Office, 1s. 3d.), owing to the lack of good all-weather roads throughout the country. The total length of macadamised roads is 9,641 km. (5,990 miles) in good repair, and 7,065 km. (4,390 miles) in need of repairs. On account of the Government concentration on the development of the railway system (mainly in Asia) less work has been done on roads. Two main thoroughfares are in course of construction, however. The first, between Istanbul and the Bulgarian frontier, which is the Turkish contribution to the Trans-European motor highway, is completed from Istanbul

to some 40 km. beyond Luleburgas. The total length of this road will be 256 km. (159 miles) of which about 200 km. has been completed; the remainder will be completed in 1940. The second highway will connect Trebizond, on the Black Sea coast, with the Iran frontier. This road, which it is hoped will carry a considerable amount of Iran transit trade, is almost completed. A road between Ankara and Istanbul, which is a pressing necessity, is contemplated. £T109.2 million have been expended on Turkish roads since 1923. During 1938 seven large bridges were built, and contracts have been awarded for the construction of a number of others.

Freight Trolleybuses in Moscow

The Moscow Institute of Urban Transport is reported to have designed a freight-carrying machine of a new type, which has been named a trolleybus. The vehicle is fitted with two power systems, one of which takes current from the ordinary trolleybus system and the other is an internal-combustion unit working on benzine. The capacity of the new machine is five tons. The introduction of the trolleybus into Moscow's transport system is expected to effect economy both in the cost of freight transport and in the consumption of benzine. The trolleybus will be manufactured from standard trolleybus and ZIS-5 motor units. Reference to the introduction of freight trolleybuses in Moscow (in October, 1935) was made at page 148 of our July 28 issue.

Conveying Small Animals by Road in South Africa

The report of the South African Railways & Harbours Board for the year 1938, in commenting upon the conveyance of small animals by double-deck road vehicles and trailers, states that, although satisfaction has been expressed by farmers for the facilities provided by the administration for the conveyance of this class of traffic, the view is still held that the tariffs are prohibitive. In this connection it has been pointed out, however, that owing to the irregularity of the traffic, the vehicles, which are specially constructed for the conveyance of small animals and are unsuitable for other classes of traffic, are subject to lengthy periods of idleness. This fact, coupled with the appreciable reductions in the rates on small stock introduced during 1937, militates against further reductions in tariffs, at any rate for the present. Experience is, however, proving to the farmer that, by reason of the better condition in which stock is received at market centres, the road motor charges are more than covered by the enhanced prices obtained. This is due to the fact that trekking animals over long distances, with consequent loss of weight, is avoided.

Road Transport and the War

The use of buses for evacuation—War legislation—Fuel rationing—Bus and coach service modifications—Women conductors

THERE could have been no more remarkable example of the enormous possibilities of road and rail co-operation than was provided by the close collaboration of all branches of both forms of transport in carrying out successfully, smoothly, and without mishap, the evacuation movements in the early days of September. Municipal undertakings, railway-associated bus companies, and independent operators all took part in the provision of road transport for the emergency evacuation of school children and other priority classes. In the London area, for example, collection was undertaken as far as possible by Underground railway services; transfer to the main-line railways for the major part of the journey was made at outlying exchange stations such as Ealing Broadway; and final delivery was usually by road. From provincial evacuation areas, to a large extent, evacuees travelled part of the way by train and completed their journeys by bus or coach, but in some cases it was found more convenient to make the whole journey by road, and, of the 90,000 or so evacuees from Leeds, for instance, some 10,000 went all the way by bus. The Birmingham & Midland Motor Omnibus Co. Ltd. handled in all some 65,000 evacuees in four days, and on the peak day employed nearly 400 of its buses on this work.

Clever planning resulted in a minimum of interference with normal road services, and in many cases it was found possible to use vehicles which ordinarily would have been employed on school-journey work and for various forms of pleasure and excursion service, for which, in any event, the demand had almost ceased. Sir William J. Thomson, the Chairman and Managing Director of the Scottish Motor Traction Co. Ltd., issued a statement to the effect that, although the company and its associates—the Western S.M.T. Co. Ltd., the Central S.M.T. Co. Ltd., the Lanarkshire Traction Company, W. Alexander & Sons Ltd., and so forth—had taken an important part in the Government evacuation scheme in Scotland, regular bus services had not been interrupted in any way.

In the London Area, originally some 240 Green Line coaches were converted into ambulances and were used to evacuate patients from London hospitals. Some months ago the London Passenger Transport Board made preparations for this move, and the coaches had their seating accommodation so arranged that they could be converted into ambulances with the least possible delay. With the exception of three routes serving the Ilford, Hornchurch, Romford, and Brentwood areas, all Green Line services were suspended on August 31, and these three routes ceased on September 1. All Green Line activities have been discontinued for an indefinite period, and 441 vehicles are now converted into ambulances. On those country sections of the routes where there was no regular means of transport apart from the Green Line coaches, London Transport has instituted local services of Country Buses.

Crisis and War Legislation

The crisis which preceded the outbreak of war on September 3 naturally resulted in bringing into being emergency legislation, of which the following notes outline the principal features.

Emergency Organisation of Goods Vehicles

On September 1, operators of goods vehicles licensed under "A," "B," or "C" licences under the Road & Rail Traffic Act, 1933, who had not registered their vehicles in the emergency index or had not joined groups, were advised by the Secretary to the Ministry of Transport in their own interests to do so at once. They could still put this right by applying either to Regional or District offices of the Ministry of Transport, and it was pointed out that, if fuel rationing became necessary it would not be possible for operators to obtain fuel for vehicles not registered in the emergency index. Owners of ungrouped vehicles (except

vehicles specially exempted from grouping), it was stated, would inevitably be placed at a disadvantage in operating their vehicles and could not expect the same consideration in matters affecting the operation of their vehicles as those who formed part of the emergency organisation.

Petrol Rationing

In fact, with the outbreak of war it was announced that petrol rationing would be introduced from September 16, and the Government appealed to all owners of motor vehicles to use them only for essential purposes. The Minister of Mines stated that: "There are very substantial stocks of petrol in the country, but, in the national interest, the best use must be made of these supplies. For this purpose, petrol distributors throughout the country have arranged to pool all their resources, and after the individual brands still in stock at garages and service stations have been sold by them at the prices now ruling, one grade only of motor spirit will be supplied to the public. This spirit will be called 'pool motor spirit.' It will be on sale ex-pump in England and Wales at 1s. 6d. a gallon. No further supplies of individual brands will be made to garages and service stations." Under the rationing arrangements, petrol ration books are in two issues, one covering the period September 16 to October 15, and the other October 16 to November 15. Rationing has since been deferred until September 23. Private car owners are able to secure a certain number of gallons a month according to the horsepower of their vehicles. The following table shows the amounts:—

Horsepower	Gallons
Up to 7	4
8-9	5
10-12	6
13-15	7
16-19	8
20 and over	10
Motor cycles	2

Further issues will depend on the availability of fuel supplies, and further books of coupons will be supplied as necessary. It should be noted that the official amount each car is allowed is expressed in units. A unit for the time being is a gallon, and there is no official indication at the moment as to whether the unit is to remain fixed. Should it be necessary to vary the rations, it would obviously be easy to vary the size of the unit and still preserve the existing proportionate allowances of fuel. Commercial vehicles and public service vehicles are being rationed according to the importance of the services they render. The unit is a gallon for petrol, and $\frac{2}{3}$ gallon for diesel oil.

Dominion, colonial, and foreign private motorcars which are in this country on an international circulation permit receive a registration card in lieu of a registration book, according to an official statement by the Secretary for Mines dated September 13. Owners needing to use such cars and requiring supplies of petrol should apply on Form R. (M.S.) 1 obtainable from Post Offices conducting motor taxation business. The form when completed should be sent to the Divisional Petroleum Officer for the area in which the port at which they arrive is situated, or where they are already in the country, for the area in which they are for the time being residing.

Goods Vehicles for Defence Purposes

The Minister of Transport issued on September 1 the Road & Rail Traffic Act (Exemption) (Amendment) Provisional Regulations, 1939, which exempt from the licensing provisions of that Act (i) the use for manning of any war stations in anticipation of enemy attack and the mobilisation of the fighting services, of any vehicle hired by naval, military, or air force authorities for naval, military, or air force purposes; and (ii) the use of any vehicle by a local authority in discharge of its civil defence functions.

The Secretary to the Ministry of Transport announced on September 1 that the Minister of Transport had made Orders under the Emergency Powers (Defence) Act with the following effect:—

(1) Any operator of a goods vehicle may use for the carriage of goods of all classes for hire or reward or for the purpose of any trade or business carried on by him any vehicle (a) which is specified in a current carrier's licence under the Road & Rail Traffic Act, 1933, and carries a valid identity certificate; and (b) which is not specified in a current carrier's licence but carries a certificate in a prescribed form issued by a Regional Transport Commissioner. The fee for such certificates is

- (i)—if an "A" licence would ordinarily but for the emergency have been issued, £1 10s. 0d. (currency one year).
- (ii)—if a "B" licence would have been issued, £1 15s. 0d. (currency one year).
- (iii)—if a "C" licence would have been issued, £1 5s. 0d. (currency five years).

This general relaxation of the conditions attached to carriers' licences may be withdrawn or modified either generally or in particular cases.

(2) The Regional Transport Commissioners may issue without fee a permit to any person to act as a driver of a heavy goods vehicle or of a public service vehicle or as conductor of a public service vehicle for a period of one year from the date of the permit.

(3) The Regional Transport Commissioners may issue permits: (a) modifying existing conditions on road service licences (no fee); (b) authorising a temporary service of public service vehicles for a period not exceeding one week (fee 5s.); and (c) authorising a new service of public service vehicles, subject to such conditions as the Commissioner may consider expedient (fee £1).

The general object of these provisions is to remove restrictions on the carriage of goods by road which would be inappropriate under war conditions and to facilitate adjustments in road passenger transport services.

The effect of these Orders is to allow any vehicle specified in a current "A," "B," or "C" carrier's licence to be used for carriage of all classes of goods for hire or reward; to enable the Regional Transport Commissioners to issue (at fees based on present "A," "B," and "C" fees) "certificates" for use in the case of vehicles for which an "A," "B," or "C" licence has expired or has not yet been obtained; to enable the Regional Transport Commissioners to authorise new bus and coach services or to modify existing licences for such services (fees are payable in some cases); to issue "permits" in lieu of "vocational" licences for drivers of public service vehicles and heavy goods vehicles.

The Minister of Transport is in consultation with representatives of the road transport industry to fix the rates of payment for vehicles obtained under the requisitioning or earmarking agreements for civil defence purposes. Meantime, the Ministry of Information announced on September 11 that, in order to avoid any hardship, local authorities are authorised to make interim payments at the following rates:—

Mechanically propelled goods vehicles:—

Weight unladen:	A week
Not exceeding 1 ton	10s.
Exceeding 1 ton but not exceeding 5 tons	15s.
Exceeding 5 tons	30s.
Addition for each trailer	5s.
Public service vehicles	40s.
Taxicabs	50s.

Civil Defence authorities may, in addition, pay the cost of any petrol consumed in running under their direction, and also the wages of the driver, at current local trade rates, if the driver is supplied with the vehicle.

Driving Licences

As the driving examiners of the Ministry of Transport have been transferred to special defence duties, there may be considerable delay before new drivers can undergo the official test. As an emergency measure county councils and county borough councils (large burghs in Scotland) have been authorised to issue a special licence entitled a national service driving licence for a period not exceeding one year, on pay-

ment of 5s., to holders of provisional licences who have not yet passed the test and to other persons who have not previously held licences of the kind which they now want, provided that they satisfy the council that they require the licence for the purpose of driving vehicles on work of national importance, are not disqualified by physical disability or otherwise, and are suitable persons to be granted such licence. Age limits as for ordinary licences will apply. No more provisional licences will be issued, but full driving licences are renewable in the ordinary way.

The Minister of Transport on September 6 stated he was informed that difficulty was being experienced in certain cases by persons who wish to offer their services as drivers for defence services but are not yet in possession of provisional or other driving licences. Licensing authorities are understood to have hesitated to issue national service driving licences to such persons in the absence of evidence of employment on national service works. At the same time recruiting and enrolment officers have felt unable to accept as a driver a person who holds no driving licence. To meet this difficulty, any person who does not yet hold a provisional or other driving licence but wishes to volunteer to serve as a driver for a defence service should, when making application to the recruiting or enrolment office of that defence service, take with him a typed or manuscript note in the form set out below and ask that it may be completed. On completion the form should be sent or taken to the appropriate licensing authority with the application for a national service driving licence. The note should be in the following form:—

"(Full name) of (address) has offered his or her services to this organisation as a driver of a motor vehicle. The offer will be accepted as soon as he/she has obtained a driving licence and can drive."

If the defence service organisation does not wish to make acceptance of the offer conditional on the applicant first learning to drive the words "and can drive" will be deleted. The form should be completed with the signature and office stamp of the recruiting or enrolment officer.

Goods Vehicle Drivers' Hours

The Minister of Transport has made an Order (announced on September 6) under the Defence Regulations to the effect that Section 19 of the Road Traffic Act, 1930, which deals with drivers' hours, should not apply to motor vehicles while used for the haulage of material or supplies for Government purposes in defence services. The Order provides that no person shall cause or permit any person in his employ or subject to his orders to drive for more than the periods hitherto permitted unless the holder of the licence of the vehicle enters on the current records required to be kept by him the fact that the driver is employed on such work and unless the driver has at least 10 consecutive hours of rest after every occasion on which an excess period is worked under the Order.

The Ministry of Transport on September 10 issued the following through the Ministry of Information:—

Apprehensions have been expressed by some operators of goods vehicles that the recent Order of the Minister of Transport temporarily removing restrictions in "A," "B," and "C" licences may invalidate policies of insurance covering the use of vehicles only in accordance with licence conditions under the Road & Rail Traffic Act, 1933. The Minister has consulted insurers and is glad to announce that they have agreed that, in order to avoid placing any obstacle in the way of the grouping arrangements, they will continue, and renew, existing policies without any general change in rates for vehicles in the Ministry groups with a waiver of the restrictions as to use. This will be subject to a review of the position when not less than three months' experience of the working of the scheme is available, and subject to the application of normal underwriting principles in individual cases. This understanding would, of course, not override the War Risks Clause in policies. The War Risks Clause does not invalidate insurance cover under the Road Traffic Acts against third party risks.

Lighting Restrictions

Vehicle lighting restrictions came into force, as part of the "black-out" arrangements, some days before war was

declared. On September 6, in consequence of the amount of light emitted by a large number of vehicles on the roads after sunset, it was found necessary to include in the Lighting Order certain regulations for vehicle lighting which go beyond those previously issued. The main points are:—

- (1) *Side-lights.* The light may be emitted only through an opening 2 in. in dia., and this opening must be obscured with two thicknesses of newspaper or the equivalent, and reflectors must be blackened. Side and top panels must be completely obscured.
- (2) *Rear-lights.* All openings other than the red rear light and stop light must be completely obscured. The red rear light must not exceed 2 in. in dia., must be screened with two thicknesses of newspaper or its equivalent, and the reflector must be blackened. The stop light must not exceed one sq. in. in dia. (*sic*) and must be screened similarly to the red rear light. This means that there must no longer be any light illuminating the rear number plate.
- (3) The front and rear bumpers and the edge of running boards must be painted white.
- (4) Direction indicators must be obscured except for a strip not exceeding $\frac{1}{4}$ in. in width.
- (5) No other lights may be used, except masked headlamps.

Some relaxation was announced on September 13. A suitable type of mask for motor headlamps has been devised by the Ministry of Home Security, and use of it is to be compulsory when it is on the market. Until then, the bulb must be removed from the offside headlamp, an opaque cardboard disk must be fitted behind the glass of the near side lamp, covering the whole area except a 2-in. diameter semi-circle, and the lower part of the reflector must be blacked out.

Service Alterations

The early days of the war resulted in remarkably few changes in the regular passenger road transport services, either long-distance or local. Some of the large provincial bus companies decided to introduce their winter schedules earlier than usual, and those serving holiday resorts naturally adapted their timetables to meet the reduced needs of their customers in view of lighting restrictions. Coach tours and excursions were cancelled. The Devon General Omnibus & Touring Co. Ltd., of Torquay—an associate of the G.W.R. and S.R.—introduced its winter schedule on September 5.

Long-distance coach services generally continued to run to their customary early-September day schedules, and proved of particular value in providing cross-country links which had become more difficult by rail with the introduction of reduced train services on September 11. It was announced jointly by the Bristol Tramways & Carriage Co. Ltd., and Associated Motorways that all the daily services from Bristol to London, the Midlands, South Coast, West of England, and elsewhere, would be operated until further notice. Certain journeys on the service between Bristol, Bridport, Seaton, Sidmouth, and Exmouth were discontinued. Night services generally were suspended with the introduction on September 1 of the "black-out" regulations; important routes affected were London to Gloucester and South Wales, London to the North-East Coast, and London to Liverpool.

The Scottish Motor Traction Co. Ltd., and its associates, issued a statement to correct the impression that the public would, in any way, be deprived of bus transport facilities. The companies so far were able to maintain their normal services throughout Scotland and would be able to do so.

Many provincial companies are now announcing reduced emergency services for next week, with the introduction of fuel rationing.

Urban Transport

Mr. Robert M'Leod, Transport Manager of Edinburgh Corporation, in announcing curtailment of some bus services, said that passengers who previously used bus services were requested to make alternative arrangements where possible, and to make full use of the trams, the services of which, meantime, were not curtailed. In the Glasgow neighbourhood, ample provision has been made by the Corporation and private bus operators in regard to transport facilities within the city and to surrounding districts. No curtailment of services to and from the city is as yet envisaged. Glasgow Corporation Transport Department has made a 25 per cent. reduction in the bus services, but buses have been taken off only during the slack periods in the morning and afternoon, and during the peak hours normal services operate on all routes. Ordinary

bus and tram services since September 6 have ceased one hour earlier than usual, and the skeleton all-night workings (which are continued) then come into force. On September 6, also, Glasgow Corporation Transport Committee unanimously agreed that all serving members of the Forces in uniform should be given free travelling facilities on all Corporation transport.

In Newcastle-on-Tyne, all duplicate transport services have been cancelled and the route between Fawdon, Gosforth, and Newcastle Central station has been stopped. Owing to the severe strain of driving in darkness, the services (bus, tram, and trolleybus) of Newcastle Corporation, and the tram services of the Gateshead & District Tramways Company have been scheduled to finish shortly after 10 p.m. since September 7.

In view of fuel rationing, the London Passenger Transport Board announced the discontinuance of a number of bus services from Saturday last, but, as fuel rationing was afterwards deferred from September 16 to September 23, these changes will not come into force until tomorrow (September 23). Excepting for a few small sections of road, the routes affected are all covered by railway, tramcar, trolleybus, or other motorbus services. The daily inter-station bus service between various main-line termini in London, which was introduced mainly to assist provincial passengers proceeding to and from Continental destinations, was withdrawn on Saturday last, September 16.

Women and Juvenile Conductors

Announcement has already been made that women are to be employed by a number of transport operators for tasks previously undertaken by men. Manchester Corporation has engaged women to act as conductors, to replace men called up for service; some 500 drivers and conductors on the Manchester Corporation Transport system have so far been called up. To date Birmingham Corporation Transport Committee has lost 20 per cent. of its total of transport employees, and in consequence women bus conductors and cleaners and male auxiliary drivers are being employed. In Birmingham, the rate of pay for women conductors and cleaners is the same as the commencing rate for men, namely, £3 0s. 6d. a week for conductors, and £2 16s. for vehicle cleaners. The age limits for conductresses are 21 to 35; auxiliary male drivers must be over 41.

Although 445 Birmingham Corporation drivers and 500 conductors have been called up to Territorial units and the reserves, this eventuality had been foreseen, and for some time past a scheme has been in operation for training conductors as drivers; those fully trained are being transferred immediately the first batch of women conductors begins work. Ribblesdale Motor Services Limited has invited applications from women of 21 and over to train as conductresses; this company has in its service more than 1,600 conductors within the military age limits.

The question of reducing the minimum age limit for male conductors has also been raised, but the Minister of Transport has decided not to take any action in the matter. It had been suggested to him that in view of the calls made on the younger men by the requirements of various forms of national service, the lower age limit for conductors should be reduced from 18 to 16. In view of the responsibilities which the conductor of a public service vehicle has to bear, there are serious objections to the employment of very young persons as conductors, however.

The Autumn Season

In common with other branches of transport and industrial activity, the road transport industry generally cancelled the arrangements it had made for the autumn. The road architecture exhibition which was to have been opened in Glasgow on September 8, under the auspices of the Scottish Building Centre, was postponed. The Commercial Motor Users Association announced the cancellation of the National Road Transport Conference, which was to have taken place at Scarborough from September 16 to 20. The Society of Motor Manufacturers & Traders has announced that neither the Motor Exhibition in October nor the Commercial Motor Show in November will be held.

Goods Vehicle Licensing in Great Britain

*The fourth annual report of the licensing authorities
under the Road and Rail Traffic Act, 1933*

THE recently-issued annual reports of the twelve area licensing authorities, appointed under the Road & Rail Traffic Act, 1933, cover the period from October 1, 1937, to September 30, 1938, which is the fourth year of the operation of the licensing system in connection with goods motor vehicles. During the twelve months regulations were made termed the Goods Vehicles (Duration of Carriers' Licences) Provisional Regulations, 1938, increasing the currency period of carriers' licences granted after August 31, 1938, to five years, two years, and five years, in the case of "A," "B," and "C" licences respectively, instead of two years, one year, and three years, as heretofore. The regulations also authorised the authorities to issue licences for a currency period shortened in order that a suitable and convenient programme of work could be arranged. As from September 1, 1938, the fees for carriers' licences were increased, and regulations were issued authorising these to be paid in instalments. The Road Haulage Wages Act received the Royal Assent on July 13, 1938, and at the close of the year the machinery for giving effect to the Act was being set up. This Act, it is remarked, is welcomed by the licensing authorities as an important step in the organisation of the road haulage industry.

The total number of holders of licences at June 30, 1938, was 239,384, a decrease of 8,175 compared with June 30, 1937. There were increases in "A" contract and "B" licences, but a reduction of 8,183 in "C" licences, the latter due largely to the fact that the three-year life of the original "C" licences expired on the latter date, and many persons holding such licences had ceased to operate during their currency, but had failed to notify the licensing authorities. The number shown under this head at June 30, 1937, is, therefore, inflated, and there is a similar, though smaller, element of inflation in the number at June, 1938.

The total number of goods motor vehicles authorised and in possession at June 30, 1938, was 513,147, an increase of 5,891 compared with June, 1937. 365,025 of these were authorised on "C" licences, and represented 71 per cent. of the total, the same percentage as in the previous year. The railway companies owned 10,145, or 11 per cent., of the motor vehicles authorised on "A" licences (including contract licences), again the same percentage as last year, and altogether they owned 10,256 of the total vehicles, an increase of 548 compared with 1937. It is of interest that of the "A" licence holders, 51 per cent. (11,759) had one vehicle only specified on their licences compared with 52 per cent. (12,335) in 1937, while 85 per cent. (19,640) had less than five vehicles compared with 86 per cent. (20,412) in 1937.

Maintenance

Taking the industry as a whole, a slight improvement in the maintenance of vehicles is reported, but the figures reveal that there remains considerable room for further improvement. The various licensing authorities have not standardised the form in which they show the results of the examination of vehicles, but it is clear that in about one in every seven vehicles examined the owner had to be served with a prohibition notice, in over 6,000 of which the notice was immediate as, in the opinion of the examiners, the state of vehicles involved immediate risk

to public safety. In two areas nearly one-fifth of the vehicles, in respect of which such immediate prohibitions were served, were scrapped by the owners. While the incidence of the defects recorded varied in the different areas, the majority were in respect of the steering, springs, brackets, pins and bushes, and hand brakes and foot brakes.

Enforcement

The licensing authorities generally call attention to the continued widespread disregard of the statutory conditions attached to licences, particularly those relating to hours of work and rest, and the falsification of drivers' records. The Transport Advisory Council has been asked to consider and report on this matter and to recommend the steps which should be taken to secure a more general observance of the law, but, having regard to the outbreak of war, little is likely to be done in this direction for some time to come.

Statistics given by the various authorities show that over 18,000 convictions were secured, quite apart from over 16,000 secured independently by the police. Several of the authorities refer to the fact that, while the number of charges against operators in respect of infringements of the law relating to drivers' hours has decreased, this is not due to better observance of the law, but rather to much greater difficulty being experienced in detecting such offences. The North Western Area Authority remarks that frequent checks taken on the road of the movements of goods vehicles, when subsequently compared with the drivers' records, show conclusively the wide extent to which falsification is practised. In one case 90 per cent. of the drivers' movements shown were false, as compared with the check. The West Midlands Authority also reports that of 255 licence holders concerned in one particular check in no fewer than 124 cases (48.6 per cent.) the records were found not to agree with the observations. The East Midlands Authority is convinced that Sections 16 or 34 of the Road & Rail Traffic Act, 1933, needs strengthening to provide that the making of false entries in a record is an offence.

On the question of drivers' hours, the South Eastern Authority, among others, remarks that there is a widespread tendency among operators to regard as almost normal periods of duty, the periods which have been fixed by Parliament as maximum on grounds of public safety, for work in connection with a goods vehicle or its load. The day's work is arranged on this basis, with the result that unexpected delays or additional pieces of work eventually lead to excessive hours of employment. There can be little doubt that the low rates quoted by some of the less reputable hauliers are rendered possible in many cases only by frequent or deliberate disregard of the law, and this unfair competition will not be prevented excepting by a strengthening of the existing statutory provisions.

ASSOCIATIONS.—The British Road Federation has stated that its activities have been suspended for the duration of the war. On the other hand, the Associated Road Operators has decided to carry on its operations, and a special sub-committee has been appointed to deal with all matters likely to arise in connection with the commandeering of vehicles, compensation, fuel rationing, and so forth.

G.W.R. Producer Gas Tractor

A four-wheel Latil tractor in experimental service, engaged in cartage work in the Cardiff district alongside petrol-engined and oil-engined vehicles

IN the days of international uncertainty that preceded the war, increasing attention was paid to the possibilities of using fuels other than petrol and diesel oil for road transport engines, and a brief survey of the alternative fuels available was included in our August 25 issue. Prominent among these is producer gas as fuel for commercial road transport, but, despite a considerable amount of propaganda, no producer gas system is yet in extensive

from an operating point of view, it may not be satisfactory so far as the mechanical side is concerned. Some of the factors which have to be taken into consideration are the effect of the exhaust gas on cylinder wear, the amount of residue in the form of ash and clinker, the moisture content, and the correct size of the fuel to suit the particular type of generator in use. It is known that there is always a particular size of coal which will give the most



Rear and front views of the Latil producer gas tractor in experimental use by the G.W.R. at Cardiff. The producer is carried vertically on the off-side, just behind the drivers' cab, and the scrubbers are above the cab roof

use. As employed experimentally in Great Britain, producer gas is generated from coal in a gas-making plant carried on the vehicle. Under certain conditions it is more economical in working than either petrol or oil, and the realisation that its more general use would reduce the country's dependence upon imported fuel, and also benefit the coal industry, has encouraged numbers of large road transport operators to use producer gas vehicles experimentally.

Towards the end of last year the Great Western Railway Company arranged to purchase a Latil tractor fitted with producer gas apparatus, and this vehicle, which is at present engaged in cartage work in the Cardiff district, employs a standard petrol engine modified for working on the special fuel produced. The essentials of the apparatus are a small furnace, together with a storage tank and cleansing device, known as scrubbers, while the basis of producer gas power is the well-known practice of converting carbon through various stages into carbon monoxide. The gas, which is used in place of petrol for driving the vehicle, is combustible in an engine when mixed with further oxygen made by adding steam to the primary air, resulting in the formation of hydrogen and more carbon monoxide. In order to start the plant, it is necessary to fill the furnace with a suitable coal which is fired by means of a small torch, and suction is provided by a hand-blower until the engine begins to function, when the necessary suction is created by the stroke of the pistons.

Great care has to be exercised in the selection of fuel as, although a particular grade of coal may be very successful

efficient result, but this size varies both with the particular type of generator and class of coal used. The G.W.R. has tried several types of fuel and, with a view to ascertaining the most suitable kind, the Road Transport Department is in close touch with the research department of the Powell Duffryn Associated Collieries at Ystrad Mynach, which is engaged in carrying out a series of tests with the firm's different grades of coal, carefully examining the exhaust gases and residue.

Train and Bus Interworking in Holland

In the Netherlands the motorbus services are subject to a licensing arrangement with the object of limiting competition for passenger traffic between rail and road. The authorities generally see to it that good connections are made between trains and buses, and at most stations there are notice boards on which the local bus services are placarded.

Another measure has been introduced recently to facilitate cheap communication between those places which formerly possessed a station and where passenger trains called. An agreement has been reached between the transport authorities and the association to which all bus services of any consequence belong, providing that holders of general railway season tickets can obtain kilometre coupon booklets, available for three months, containing 200 5-km. coupon-stamps, at a cost of fl.10.50. The cost of a bus ride is thus about 1 cent a km.

Highway on Railway Formation

Work of enlarging tunnels a special feature of conversion for express highway of derelict South Pennsylvania Railroad

SINCE the autumn of 1937 when—in the Railways & Road Transport Section of our issue of September 24 of that year—we described the works entailed in the conversion of the partly completed South Pennsylvania Railroad into an express highway, these works have been proceeding steadily. It will be remembered that at the end of 1885 nearly 4½ miles of tunnels had been driven for the railway prior to its abandonment, and in 1936 it was found that 15,000 ft. of these tunnels were of sufficiently large section for a two-track roadway, and that the remaining 8,000 ft. had to be enlarged; also 14,000 ft. of new tunnel had to be driven.

We are now able to publish two illustrations of Laurel Hill tunnel, one of the original tunnels on the railway, showing surveyors at work with a view to its being cleared and enlarged, and the service line entering one of the portals to facilitate these works.

The estimated cost of rehabilitating the formation of the old railway and of constructing the double 22-ft. concrete roadways, having a ruling gradient of 1 in 33 and 14-ch. minimum radius of curves, is now placed at over \$60,000,000. The roadway, which will form an almost ideal express highway through the Allegheny Mountains, will be 164 miles in length and will connect Harrisburg and Pittsburg. As compared with the existing parallel Lincoln Highway, the new road will have a rise and fall of only 3,940 vertical ft., as against 13,880 ft. on the older highway. The nine larger tunnels also provide protection from hillslides where the new road would otherwise be most liable to damage from this cause.

The express coach services already operating in this area by the Pennsylvania Greyhound concern include a 175-mile run between Gettysburg (approximately abreast of Harris-



Surveyors at work in Laurel Hill tunnel as a preliminary to its clearance and enlargement

burg) and Pittsburg, over the roughly parallel Lincoln Highway, in 5 hr. 50 min., so that services over the much easier new road should enable the 199 miles between Harrisburg and Pittsburg to be covered in less time. Reference to existing bus services in this part of the United States was made in a leader on pages 583-4 of our issue of April 7 last.



Left: One of the entrances to the Laurel Hill tunnel showing the service tramline for removing spoil

RAILWAY NEWS SECTION

PERSONAL

Colonel Gilbert S. Szlumper, C.B.E., General Manager, Southern Railway, has been appointed Director General of Transport at the War Office.

Mr. E. J. Missenden, Traffic Manager, has been appointed Acting General Manager, Southern Railway, and has become a Member of the Railway Executive Committee, *vice* Colonel Szlumper.

Mr. G. Cole Deacon, Secretary of the Railway Companies' Association, has been appointed Secretary of the Railway Executive Committee.

Mr. Vincent L. Dean who, as we announced in our issue of September 1, was recommended by the Ceylon Ministry of Communications and Works for appointment as General Manager of the Ceylon Government Railway, has now been confirmed in that appointment.

In connection with the change of Government in the Union of South Africa, Mr. C. T. te Water, the High Commissioner for the Union in London, has resigned and has been succeeded, as from September 19, by Mr. S. F. Waterson, the South African Minister in Paris. Mr. te Water was recently re-appointed as High Commissioner in London for a third term of five years.

We regret to record the death at St. Ives, Cornwall, on September 14, of Mr. Arthur Reginald Trevithick, C.B.E., grandson of Richard Trevithick, famous Cornish pioneer engineer. Mr. A. R. Trevithick, who was a son of Mr. Francis Trevithick (from 1846 to 1857 Locomotive Superintendent, Northern Division, L.N.W.R., at Crewe) was born in 1858, and was educated at Cheltenham College. Like his father, he served the L.N.W.R. for many years. He was one of the deputations of L.N.W.R. officials which visited the U.S.A. in the early part of this century, and shortly after his return was appointed Works Manager at Crewe, in succession to Mr. H. D. Earl, who became Wagon Superintendent at Earlestown. In April, 1910, Mr. Trevithick was appointed to succeed Mr. Earl in the latter position, when Mr. Earl became Carriage Superintendent. Finally Mr. Trevithick was appointed Carriage Superintendent, L.N.W.R., on April 1, 1916, on Mr. Earl's retirement, and held that position until grouping. Under the interim L.M.S.R. organisation prepared in December, 1922, Mr. Trevithick was nominated as Divisional Carriage

Superintendent (Wolverton), but, as he was then approaching 65 years of age, he decided to retire.

We regret to record the death on September 13 of Mr. John Shaw who in 1933 retired from the position of Divisional Engineer, Eastern Division, Southern Railway. Mr. Shaw was apprenticed in 1890 to the Manchester, Sheffield & Lincolnshire Railway, spending two years in the locomotive



The late Mr. John Shaw

District Engineer, S.E.C.R., and Divisional Engineer, S.R., Ashford, 1904-33

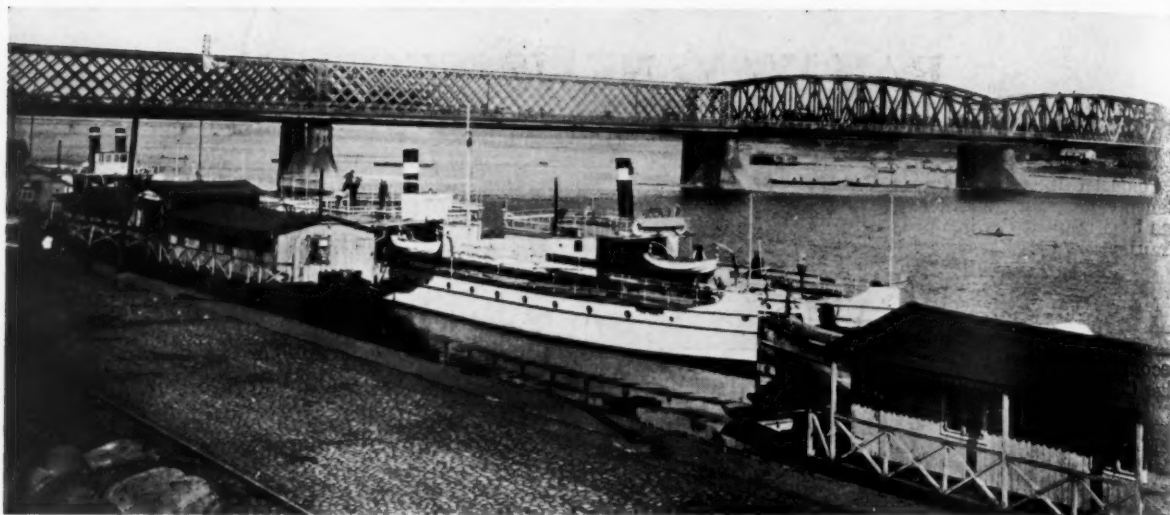
and carriage works at Gorton under the late Mr. Thomas Parker, and completing his pupilage in the Engineer's Office at Manchester under Mr. Alexander Ross. In November, 1892, Mr. Shaw was transferred to the District Engineer's office at Grimsby Docks, and remained there until March, 1897, when he received an appointment on the South Eastern Railway under the late Mr. Percy C. Tempest, Chief Engineer. In July, 1904, Mr. Shaw was appointed District Engineer at Ashford, and in 1923, at the time of grouping, he took over the corresponding position under the Southern Railway, which he held until his retirement ten years later.

We regret to record the death on September 10, of Mr. Charles William Godson Little, who was 73 years of age, and until his retirement in December, 1929, was Chief Electrical Engineer to the British Electrical Federation. As such he was responsible for a large amount of electrification work in connection with tramways and light railways associated with the British Elec-

tric Traction Co. Ltd. The last important work of this kind for which he was responsible was the electrification of the Swansea & Mumbles Railway, which was carried out in 1928; public electric traction was introduced there on March 2, 1929. Mr. Little joined the B.E.T. in 1899 and thus served that organisation for thirty years.

Mr. W. Tetley Stephenson, who since 1918 has been head of the Department of Transport, School of Economics, University of London, has retired. From 1894-1897 he was at St. Catherine's College, Cambridge, and took an honours degree in Mathematics. Intending to enter the Indian Civil Service, he took a fourth year at Cambridge, which brought him into touch with Professor Marshall. At that time Sir George Gibb, the General Manager of the North Eastern Railway, was considering engaging young university men with good degrees, and through the introduction of Professor Marshall and Sir William Acworth, Mr. Stephenson entered the service of the North Eastern Railway in 1898. In 1906 he left the railway service to assist Sir William Acworth in the lecture work he had already started at the London School of Economics. From 1915 to 1918 he was called back into practical work, this time to the Commercial Department of the London Underground Railways where he was a colleague of Mr. Frank Pick for three years. In 1918 he returned to the London School of Economics as Head of the Department of Transport, and in 1922 was made Sir Ernest Cassell Reader in Commerce (with special reference to Transport). One of Mr. Stephenson's best appreciated characteristics was the infinite pains he took with individual students. It is largely due to him that transport became a recognised subject of the B.Sc.(Econ.) and B.Com. degrees of the University of London, and in no other British university is the subject so well established or recognised. Mr. Stephenson was also responsible for starting the Railway Research Service, now a separate body run by the railways under the direction of Mr. C. E. R. Sherrington.

Mr. G. J. Ponsonby, M.A., who is succeeding Mr. W. Tetley Stephenson at the London School of Economics, University of London, was educated at Marlborough College and Trinity College, Cambridge. In 1926 he obtained an honours degree in Economics at Cambridge, and was later appointed Assistant Secretary of the Railway Research Service. In 1930 he became a Lecturer at the London School of Economics, and as from October 1 next



The new railway bridge spanning the Vistula and connecting the Central and East stations at Warsaw



Left: A corner of the Dutch railway centenary exhibition now being held in Amsterdam. This particular view shows part of a shunting yard complete with signals, signalbox, level crossing barriers, and lights. The first railway in Holland was that from Amsterdam to Haarlem, opened on September 20, 1839

Right: The remains of Newlands station in the Forest of Dean. It belonged first to the Coleford Railway, which was opened between Wyesham Junction and Coleford on September 1, 1883, and amalgamated with the Great Western Railway on July 1, 1884. On December 31, 1916, the line was closed and the permanent way removed for military use overseas. The Newlands station buildings are now used as a dwelling



will be a Sir Ernest Cassell Lecturer in Commerce (with special reference to Transport) in the University of London, and Organiser of Railway Studies at the London School of Economics.

Sir Charles Barrie, M.P., has joined the board of the British Oxygen Co. Ltd.

We regret to record the death of Mr. A. E. Chapman, formerly District Superintendent of the Great Southern & Western Railway. Mr. Chapman retired from this position on the amalgamation of the Irish Free State Railways in 1925.

Mr. Walter S. Thompson, Director of Publicity of the Canadian National Railways and Trans-Canada Air Lines, Montreal, has been appointed Chief Press Censor for the Dominion of Canada. Mr. Thompson was born in Newcastle-on-Tyne, and had his early press training in Fleet Street. He is said to enjoy a wider acquaintance among newspaper men, publishers, writers, and radio broadcasters than any other man in Canada, and one of his biggest single jobs was handling the press arrangements for the Royal Tour of Canada this summer.

We regret to record the death on Sunday last, September 17, of Mr. William Simpson Wreathall, a Member of Council of the British Electrical Federation and a Director of a large number of railway-associated provincial bus companies. He was born in 1878 and was educated at Hymers' College and at Queen's College, Cambridge. At the age of 23 he joined the secretarial staff of British Electric Traction Co. Ltd. in February, 1901, and was appointed Secretary of Dolter Electric Traction Limited, and of the Barrow-in-Furness Tramways Committee of the B.E.T. For many years past Mr. Wreathall has occupied an important position in the provincial bus industry and at the time of his death he was Chairman of Blackpool Omnibus Stations Limited; Crossville Motor Services Limited; East Yorkshire Motor Services Limited; the National Electric Construction Co. Ltd.; Ribble Motor Services Limited; W. C. Standerwick Limited; and the Yorkshire Woollen District Transport Co. Ltd. He was also a Director of Cumberland Motor Services Limited; Eastern Coach Works Limited; the Eastern Counties Omnibus Co. Ltd.; Robert Edwards & Co. Ltd.; Hebble Motor Services Limited; Lincolnshire Road Car Co. Ltd.; London Coastal Coaches Limited; North Western Road Car Co. Ltd.; Omnibus Stations Limited; Samuelson New Transport Co. Ltd.; Tilling & British Automobile Traction Limited; Trent Motor Traction Co. Ltd.; West Yorkshire Road Car Co. Ltd.; Wright Bros. (Burnley) Ltd.; and United Automobile Services Limited. In addition, Mr. Wreathall was a Member of Council of the Federa-

tion of British Industries, Chairman of the Omnibus Owners' Association Inc., and in March, 1938, was elected a Director of the British Electric Traction Company itself, the parent of the group which he served for over 38 years.

We regret to record the death at Cape Town on August 8 at the age of 86 of Mr. Thomas Smith McEwen who played a prominent part in the early development of railways in South Africa. Mr. McEwen went to South Africa from Inverness, Scotland, in 1874, and was appointed Assistant Engineer, Construction, at Grahamstown. The next year he was transferred to the survey of the Midland line from Uitenhage to Graaff-Reinet. This line was opened as far as Addo in 1875, but it was not until 1879 that it was opened to Graaff-Reinet and Grahamstown. In 1883 Mr. McEwen went to East London as acting Main-

tenance Engineer of the Eastern System. Later he became District Engineer of the extension from Burghersdorp to Springfontein. On the completion of this extension he reverted to open lines and became Resident Engineer successively at East London, Port Elizabeth, and Cape Town. Mr. McEwen was selected and was sent to Port Elizabeth as Chief Resident Engineer of the Grand Junction lines in 1899. Two years later he was appointed Assistant Engineer-in-Chief and later in the same year was made Assistant General Manager of railways. In 1902 he succeeded the late Sir Thomas Price as General Manager of the Cape Government Railways, which position he held until the amalgamation of the railways of the four provinces in 1910, when he became a Commissioner of the Railway Board, from which position he resigned in 1915.

Irish Traffic Returns

IRELAND	Totals for 37th Week			Totals to Date		
	1939	1938	Inc. or Dec.	1939	1938	Inc. or Dec.
Belfast & C.D. pass.	£ 2,330	£ 2,746	- £ 416	£ 100,919	£ 98,494	+ £ 2,425
" " (80 mls.) goods	614	477	+ 137	16,454	15,951	+ 503
" " total	2,944	3,223	- 279	117,373	114,445	+ 2,928
Great Northern pass.	10,850	13,200	- 2,350	431,500	423,500	+ 8,000
" " (543 mls.) goods	13,150	10,000	+ 3,150	376,900	330,000	+ 46,900
" " total	24,000	23,200	+ 800	808,400	753,500	+ 54,900
Great Southern pass.	42,425	44,673	- 2,248	1,408,886	1,404,213	+ 4,673
" " (2,076 mls.) goods	54,500	43,167	+ 11,333	1,506,770	1,443,156	+ 63,614
" " total	96,925	87,840	+ 9,085	2,915,656	2,847,369	+ 68,287
L.M.S. Northern pass.	4,570	5,180	- 610	176,770	174,460	+ 2,310
" " Counties goods	3,190	2,370	+ 820	102,490	95,220	+ 7,270
" " (271 mls.) total	7,760	7,550	+ 210	279,260	269,680	+ 9,580

* 36th week

CONTRACTS AND TENDERS

H. J. Skelton & Co. Ltd. has received an order from the Egyptian State Railways for miscellaneous steel plates.

Since the denunciation of German contracts for the supply of rolling stock for Argentine Railways, enquiries have been received from Argentina by Milan and Turin firms, states Reuters.

Leyland Motors Limited has received an order from the Western Welsh Omnibus Co. Ltd. for six diesel-engined single-deck buses.

Leyland Motors Limited has received orders for goods motor vehicles from railway-associated companies as follow: Joseph Nall & Co. Ltd., six; Wordie & Company, two, one diesel-engined.

The Delaware & Hudson Railroad is proposing to purchase 1,000 all-steel double-bogie hopper cars with a capacity of 50 short tons.

The Associated Equipment Co. Ltd. has received an order from the Hastings Tramways Company for 20 double-deck trolleybuses of A.E.C.—English Electric design. The Hastings Tramways Company is, of course, a subsidiary of the railway-associated Maidstone & District Motor Services Limited.

The South African Railways and Harbours Administration is calling for tenders (Tender Number 2332) for the supply and delivery of one locomotive boiler, fitted with steel firebox. Tenders should be addressed to the Tender Board, South African Railways and Harbours, Headquarter Offices, Johannesburg, by whom they will be received up to November 13. A copy of the specifications and general conditions of tender, together with drawings, may be borrowed from the Department of Overseas Trade.

TRANSPORT SERVICES AND THE WAR—4*

Improvements in passenger services—International trains resumed on the Continent—Irish channel sailings—Effect of the war on Danish transport

For the first time since the beginning of the evacuation movements which preceded the war, railway services have shown a marked tendency to improvement during the past few days. On Friday last, September 15, a semi-official statement was issued through the Press Association, outlining some of the considerations which influenced the Railway Executive Committee in so drastically curtailing passenger facilities the previous Monday. This statement said:—

"The cuts in passenger services on the railways are due largely to the increased freight movements necessitated by the war and the fact that much of this extra traffic must be run by day owing to difficulties caused by the blackout. Since the organisation of the railways was placed at the disposal of the Government after the completion of the task of civil evacuation, many large-scale movements, both of passengers and freight, have been carried through. Coupled with these, extra stores for emergency and material for protective works and numerous other purposes have been handed to the railways, and the conditions of almost complete black-out every night have added enormously to the problems of efficient working.

"During peace-time the railways ran 678 nightly express goods trains, giving overnight deliveries between large cities and towns, but, owing to the black-out at railway terminals and yards, many trains which normally run at night have to be run by day. Consequently, the passenger services have been cut, and although endeavours are being made to avoid and reduce serious overcrowding, rigid economy in both passenger train mileage and the use of locomotives is necessary to cater adequately for the transport of freights which must have prior possession of the lines, as compared with passenger traffics.

"The deceleration of main-line express trains has enabled locomotives to haul heavier loads and has resulted in greater availability of the lines for priority traffics. But while the railways have no desire to limit passenger travel, or to restrict the civil life of the population more than is absolutely necessary, the re-introduction of normal passenger services is not practicable. The railways are endeavouring to the utmost of their power to discharge their duties to the nation in as efficient a manner as possible in the rapidly changing conditions which must be expected at the present time."

Improved Train Services

Already, considerable detail improvements have been made in the L.M.S.R., L.N.E.R., and G.W.R. services (as outlined in the following paragraphs), and the Southern Railway has reinstated a large part of its summer timetable.

Southern Railway.—The Southern Railway announced on September 16 that on and from Monday, September 18, the normal Monday to Friday passenger services to and from London would be restored with certain exceptions. Among the trains which remain cancelled are Victoria-Brighton non-stop expresses, except during the morning and evening rush hours; the fast Bournemouth and Weymouth trains running non-stop to Southampton or Bournemouth; a number of the London-Portsmouth electric expresses; some of the fastest trains during the slack hours on other sections of the line; and numerous late evening trains. There will inevitably be some further reductions at the week-end to enable the engineers to carry out track maintenance work which it is now impossible to do at night.

The Southern Railway also put back into service on Monday last, 21 Pullman cars, 11 pantry sets, and 8 Bognor buffet sets, and also restored Pullman cars on the boat trains to Southampton Docks in connection with the ocean liners.

* Previous articles in this series have been "Transport Services and the Crisis," September 1, page 334; and "Transport Services and the War," September 8, page 358, and September 15, page 382.

L.N.E.R.—On September 16, the L.N.E.R. announced additional trains from Liverpool Street to Hertford at 10.5 a.m. and to Bishops Stortford at 2.48 p.m. For passengers from the Hertford and Bishops Stortford district, the 7.58 a.m. and the 8.40 a.m. trains from Hertford to Broxbourne were extended to Liverpool Street, calling at Waltham Cross *en route*. In addition, the 8.31 a.m. Broxbourne to Liverpool Street is now starting from Hertford at 8.13 a.m. On Saturdays, an additional train now runs from Liverpool Street at 12.30 p.m. to Bishops Stortford and Cambridge, calling at certain intermediate stations. The foregoing are, of course, in addition to the 18 extra trains put into service on September 12.

L.M.S.R.—On September 18 it was stated that more trains were being put on by the L.M.S.R. in amplification of its emergency timetable introduced on September 11. Most of the extra trains came into operation immediately. With these new services the total number of additional trains which the L.M.S.R. has run since the introduction of war-time train services exceeds 400. The additional express services include 7.40 p.m. Euston to Stranraer; 9.15 p.m. Euston to Glasgow; and 9.35 p.m. Euston to Rugby. The 2.40 p.m. service to Liverpool and Manchester, hitherto a combined train, now runs regularly as separate trains for Liverpool and Manchester. On the St. Pancras main line extra trains are being run as follows, the times given being departures from St. Pancras: 8.50 a.m. and 10.15 a.m. to Luton; 3.55 p.m. to St. Albans; 4.30 p.m. to Bedford; 5.35 p.m. and 6.15 p.m. to Luton; 8.20 p.m. to Harpenden. In the reverse direction new services are: 12.45 p.m. and 5.40 p.m. (both Saturdays only) Luton to St. Pancras. Full normal services have now been restored on both the Watford to St. Albans and Harrow to Stanmore branches.

G.W.R.—The announcement was made on September 16 that the G.W.R. had arranged to run additional passenger trains every morning in each direction between Paddington and Hayes, and during the afternoon and evening extra trains to Slough and Reading, giving connections with the 6.50 p.m. to Newbury, Westbury, and Weymouth. There is now also to be a service on weekdays between Maidenhead, Marlow, and Bourne End, and between Henley and Reading, while additional trains run between Reading and Didcot. The full new G.W.R. timetable (as we announced last week) is to be brought into force on Monday, September 25, and will restore most of the London suburban services.

Message to L.N.E.R. Staff

The following message to the staff of the London & North Eastern Railway from Mr. C. H. Newton, Chief General Manager, was issued on September 8:—

"Unhappily our country is again at war. The quarrel is not of our seeking, and we know that our cause is just, but victory will not be won without a determined effort, and during the period of strife our railways will be working at great pressure. As the London & North Eastern Railway serves the East Coast, we may at times have to carry on under difficult conditions, and I have written this message to the staff in the hope that it will encourage them to make light of the stress and strain of wartime. A fine start was made with emergency work when the programme for evacuating the civil population went through without a hitch. Let us one and all, man and woman alike, strive to maintain the same high standard of efficiency throughout the war. Confident as I am in your skill and spirit of endurance, I send you my best wishes for success in the task which lies ahead."

London Transport

The Ministry of Transport announced on September 18 that certain London tube stations, which have had to be closed, will be open for traffic as soon as the major works necessary to make these stations immune from flooding have been completed. The protective works are being carried out as speedily as possible, but owing to the difficult nature of the task, in some cases, it may take several weeks before stations

can be brought back into service. Members of the public are assured that every effort is being made by the London Passenger Transport Board to complete the works as quickly as possible.

London Transport is arranging for the cultivation as allotments of all suitable margins of land adjoining its railways. These margins total a considerable acreage and local staff will be given the first option of taking over an allotment. Those members of the board's staff who in the past have made themselves responsible for the cultivation of flowers at the board's stations, are also being encouraged to grow vegetables. This does not mean that the growing of flowers is to be discouraged entirely, but next year the annual stations gardens competition will be in the form of a station allotments competition.

Carriage Lighting

We understand that a standardised lighting system for all railway carriages during black-out hours will be put into operation as soon as possible. At present there is variation in train lighting. Some compartments are without lights, while others have dimmed lighting in the form of a blue-coloured electric bulb. Should the Home Office decide on a relaxation of lighting restrictions generally, the railway companies will be able to increase their train lighting.

Freight Services

In consequence of the pressure on the railways owing to war requirements, the "green arrow" and "blue arrow" registered transit arrangements for expediting delivery of consignments by railway have been suspended since September 3. Cash-on-Delivery facilities have been discontinued from September 14.

Restrictions on Photography

The railway companies have now notified holders of photographic permits that, in consequence of the outbreak of war, it is no longer possible to grant facilities for the taking of photographs on railway premises, and existing holders of current permits were asked on September 15 to return them. Reference to restrictions on photography were made at page 384 of last week's issue of THE RAILWAY GAZETTE.

Services on the Continent

On Sunday last, September 17, Soviet Russia invaded Polish territory from the east on the pretext that Poland was without an effective government and that the Soviet authorities therefore proposed to take persons of the same race under their custody. Soviet bombers completely destroyed the frontier station at Sniatyn, according to a Bucharest report, on Monday. Soviet troops advanced through Pinsk to Brest-Litovsk, where they met German troops.

On Thursday of last week (September 14) the Official German News Agency reported that railway communication between Danzig and East Prussia and between East Prussia and Germany west of the corridor would soon be restored, and that communication on the Dirschau-Bromberg and the Bromberg-Schneidemühle (east of the Corridor frontier) lines was also in course of being restored. The first regular through train from Berlin to Danzig since the outbreak of the war, left Berlin on the night of September 17, according to a Berlin broadcast. It was added that there is to be a daily service to Danzig, but, for the time being, it will be reserved for troops and officials.

On the western front, a message from Luxembourg states that at 11 a.m. on September 13 the Germans blew up the railway opposite Schengen on the Trier-Metz line. Schengen, which is on the territory of the Grand Duchy, was lit up by the flames. There were no casualties.

A Rome message dated September 17, said that two daily train services, from Rome to Munich and from Venice to Munich, have resumed.

The Position in Denmark

A correspondent in Copenhagen summarises the position in Denmark as follows. At the end of August all through sleeping cars and passenger coaches between Denmark and Germany, including the Copenhagen-Paris coach of the Nord Express, were withdrawn, and the night service from Gedser

to Warnemünde was also stopped. Through passenger coaches to and from Sweden and Norway, except sleeping-cars, were withdrawn at the same time. A week later the following further withdrawals were made: the high-speed Engländeren diesel service between Copenhagen and Esbjerg (as the Esbjerg-Harwich steamboat service had been suspended); the high-speed Nordpilen diesel service between Flensburg and Frederikshavn and Hirtshals (as the connecting steamer services to Sweden and Norway had been stopped); and all through passenger coaches across the Great Belt, except sleeping cars.

With the introduction of the winter timetables on September 20, further considerable curtailments were made, amounting to 25 per cent. of the previous passenger train mileage. All sleeping and dining cars were withdrawn, and the Lyntog now terminate at Aalborg, Skive, and Esbjerg, instead of at Frederikshavn, Struer, and Ringkøbing. The ferries across the Great Belt have been slowed down by 13 min. to a crossing time of about 1 hr. 25 min. (so as to secure a 40 per cent. economy in fuel consumption); other ferry services have been similarly treated. The frequency of the electric suburban services around Copenhagen has been reduced from three to two trains an hour outside the rush hours. The steam and diesel services between Copenhagen and Helsingør via Rungsted have reverted to the arrangement existing before this summer, the Helsingør trains running non-stop Østerport-Rungsted and stopping at all stations thence to Helsingør, while electric and diesel trains handle the intermediate stations between Østerport and Rungsted. All these reductions are caused by the necessity of strict fuel economy, all fuel for traffic purposes having to be imported. All motorcar ferry services have already been stopped, as the use of private cars has been prohibited by everyone other than such "priority classes" as doctors.

As the winter timetables had already been printed before the outbreak of hostilities, they have been issued with a supplement giving the changes; only for the Copenhagen suburban services is an entirely new timetable being published at present. Further reductions in train services, which are foreshadowed, include slowing down the Lyntog from a maximum speed of 120 km.p.h. (75 m.p.h.) to 100 km.p.h. (62 m.p.h.), the same as for steam trains. An entirely re-cast timetable is expected to be brought into force not later than at Christmas.

The Copenhagen Municipal Tramways have reduced the frequency on many routes, and the use of trailers is being restricted; in addition, the overall speed is being reduced.

Taxis and lorries over 2.4 tons laden weight are having their usual petrol consumption reduced by 40 per cent., and lighter lorries by 70 per cent.

Irish Channel Services

The L.M.S.R. Irish Channel vessel *Cambria* and two cargo boats, *Slieve Bloom* and *Slieve League*, were held up at Holyhead on September 18, as the crews refused to sail under the flag of Eire, which, as the ships are registered in Dublin, they were required from September 18 to fly. The crews refused to sail because they believed that the Eire Government would not compensate their wives and dependents for loss of life or injury if the boats were sunk. The L.M.S.R. applied for the transfer of the port of registration of its fleet to a British port.

Accordingly, the Holyhead-Dun Laoghaire (Kingstown) service was suspended until further notice; the Heysham-Belfast service is suspended. On Tuesday last (September 19) the 8.50 p.m. train from Euston (the Irish boat train) was announced to run as far as Chester only. On Wednesday, however, the Holyhead-Dun Laoghaire sailings were resumed under the British flag.

Notice was given on September 11 that the hours of departure from Liverpool of the steamship services to Belfast and Dublin might be altered from day to day to meet existing circumstances, and that passengers travelling on the 2.40 p.m. train from Euston (due at Liverpool at 7.24 p.m.) would not necessarily arrive in time for the steamers.

The Bristol Channel

Since September 7, P. & A. Campbell Limited has restricted its Bristol Channel services to the route between Weston-super-Mare and Cardiff.

STAFF AND LABOUR MATTERS

Railway Staff National Tribunal

On Tuesday, September 19, the Railway Staff National Tribunal began the hearing of the claims of the three railway trade unions for increased rates of pay and improved conditions of service. All previous hearings of the tribunal have been held in Montagu House, Ministry of Labour, but the venue on this occasion was changed to the shareholders meeting room at Euston station, L.M.S.R. The members of the tribunal were Sir Arthur Salter (Chairman), Mr. H. E. Parkes, Member, nominated by the railway companies, and Mr. H. J. May, Member, nominated by the trade unions.

The assessors nominated by the railway companies were Sir James Milne, General Manager, Great Western Railway; Sir William V. Wood, Vice-President, London Midland & Scottish Railway, and Mr. Oliver Cromwell, Staff Assistant to the General Manager, Southern Railway. The assessors nominated by the trade unions were Mr. J. H. Potts, President of the National Union of Railwaymen; Mr. W. J. Evans, President of the Associated Society of Locomotive Engineers and Firemen, and Mr. F. C. Watkins, President of the Railway Clerks' Association.

The advocates were Mr. G. L. Darbyshire, Chief Officer for Labour and Establishment, L.M.S.R., for the railway companies; Mr. John Marchbank, for the National Union of Railwaymen; Mr. W. J. R. Squance for the Associated Society of Locomotive Engineers and Firemen; and Mr. W. Stott for the Railway Clerks' Association.

Terms of Reference

The terms of reference were to ask the Railway Staff National Tribunal, established under Appendix, Part VI, to the Agreement in regard to Machinery of Negotiation for Railway Staff, dated February 26, 1935, to hear and decide the following claims:—

By the National Union of Railwaymen.—That the minimum rate of pay of any adult conciliation grade employee (male or female) shall be not less than 50s. a week.

By the Associated Society of Locomotive Engineers and Firemen (in regard to drivers, motormen, firemen and engine cleaners).—

(1) RATES OF PAY

Drivers and Motormen: 1st—3rd years 13s., 4th and 5th years 14s., 6th year 15s., 7th year and onwards 16s. a day.

Firemen: 1st—3rd years 10s. 6d., 4th and 5th years 11s., 6th—8th years 11s. 6d., 9th year and onwards 12s. a day. Firemen not appointed after completing 313 driving turns to be paid the driver's minimum rate when firing, irrespective of years of service as firemen.

Engine Cleaners: Age in years—16 and under 4s., 17 5s., 18 6s., 19 7s., 20 and 21 8s. 4d., 22 and over 9s. Cleaners not appointed after completing 313 firing turns to be paid the fireman's minimum rate when cleaning and receive a fireman's uniform.

(2) HOLIDAYS

After twelve months' service two weeks' holiday (twelve weekdays) with full pay to be given, annually.

(3) SUNDAY DUTY

All time worked between midnight Saturday and midnight Sunday to receive payment of a minimum of 8 hours' pay, plus half time for all time worked, for each time of signing on duty. Turns commencing on Sunday extending into Monday to receive payment of a minimum of 8 hours' pay, plus half time for all time worked, and to be exclusive of the guaranteed week.

(4) HOURS OF DUTY

Cancellation of the provision for an extension of rosters, where economy will accrue, up to nine hours a day.

By the Railway Clerks' Association (on behalf of the clerical and other salaried staff).—In the case of those not in receipt of the aggregation allowance, all time worked between 10.0 p.m. and 4.0 a.m. shall be paid for at the rate of time-and-a-quarter, it being understood that the night off in ten for continuous night duty should continue, but that the night off in fifteen for intermittent night duty should be discontinued.

The N.U.R. Claim

Mr. Marchbank, presenting the case of the N.U.R., submitted a statement showing adult conciliation grade employees with base rates of pay of less than 50s. a week, and changes which operated as from the beginning of the first full pay period following July 29, 1939, and a statement which contained extracts of paragraphs 38 and 76 from the report of the Transport Advisory Council on the proposals of the main-line railway companies as to the conveyance of merchandise by rail.

He referred to the tribunal's decision No. 5 and said that his union was disappointed at the failure to establish the whole of the claims, but the strongest feeling was shown in regard to the claim for a 50s. minimum wage, and the governing body of the union decided to concentrate on that one item. He dealt with the decision of the railway companies to increase the minimum wage to 45s. from July 29, and said that while that was a step in the right direction, it could not be accepted as meeting the claim which had been put forward.

The railway companies, he said, in raising the minimum wage to 45s. had followed a different principle from that which was laid down in the tribunal's decision No. 3. The tribunal added 1s. to the base and current rates and thus preserved the old basis, which gave more satisfaction because it did not disturb the general basis which had existed from the time of the national agreements and the provision of the sliding scale came into operation. The operation of the companies' decision had had the effect of reducing the differentials which existed between certain grades, while in some cases there were no differentials at all between the rates paid in London, industrial and rural areas.

He referred the tribunal to his submissions at previous hearings in regard to this claim, pointing out that the claim was not being argued from the standpoint of a prosperity increase in the rates of pay. The ability to meet such rates, he said, is a matter primarily concerning the management. Mr. Marchbank referred to the report of the Transport Advisory Council, which had suggested that some provision should be made that in the event of the railway costs being increased by granting improved remuneration or conditions of employment, the Railway Rates Tribunal should not call in question the propriety of such improvements.

A true interpretation of clauses 38 and 76 of the report, he said, would appear to be that the costs or charges should not be a determining factor in dealing with wages and conditions. The establishment of improved conditions was not to be taken into account by the rates tribunal to the extent of criticising the companies when charges were under review. If, he said, he was correct in his interpretation of the position, then the general quotation of revenue, net or otherwise, against the claim of the union was not justified. The tribunal had expressed its opinion that a strong case had been presented for making an increase upon the lowest rates a first claim as soon as the financial position made any substantial concession possible. The companies' improvement, he said, was by no means a "substantial concession." Indeed, only to the extent of granting 50s. per week could his people be convinced that there was a proper base rate in operation.

The union's claim was argued on "human needs" and Mr. Marchbank stressed the point that the justice of the claim was not dependent upon traffic receipts or net earnings.

"My union," said Mr. Marchbank, "has taken a very definite line on this matter of the adult minimum. It is submitted through the machinery because of the firm belief that our case is one that must command the respect and support of all those who believe that men and women engaged in industry must be granted a wage consistent with human needs."

The A.S.L.E.F. Claims

Mr. Squance, presenting the claims of the A.S.L.E.F., said that the tribunal's decision No. 5 was rejected by the members of the society and a grave industrial crisis arose therefrom. Members of the society would no longer accept negative replies as solutions to the many programme items and struggles of the society to secure 1939 hours, wages and conditions of service as suitable reward for 1939 intensified railway operations under which the tempo had reached almost breaking point. Further, there was no comparison between the conditions applicable today as compared with 1919 and 1920, and allowing the issue of decision No. 5, he said the members lost faith in constitutional methods and eventually decided on strike action to compel greater attention to their pro-

gramme items and grievances and naturally to secure a greater measure of success which they declared was long overdue. After much turmoil and purely to play their true part in the national emergency the executive committee of the society decided to refer the programme items again through the machinery for further consideration.

"If," he said, "in these exceptional circumstances with due regard to the national interest, just and favourable consideration is given to the claims submitted, we are confident it will go a long way towards removing the present misunderstanding and hostility of our members, and further it will also create new hope and confidence in the existing machinery of negotiation and its capacity for adequately dealing with the many difficult problems that will arise in transport during the war period and the nation's extremity. All these programme items, he said, have been submitted purely on a craft basis, skill, responsibility, onerous nature of duties, physical and mental strain, and without regard to the cost of living figures, or the position of men in receipt of the lowest rates."

It was stated that slow promotion with alternating redundancy and putting back in grade of both drivers and firemen, together with the dismissal of cleaners, has destroyed what formerly was regarded as steady employment with excellent prospects of promotion. "Cleaning today," said Mr. Squance, "is looked upon as a necessity, not a luxury. In fact, engine cleaning is now regarded as a reservoir for spare and occasional firing duties." So remote was promotion that there was a loss of some 10 years on each promotion to men in the line of promotion, or in money value up to £500 in a man's footplate career.

In spite of a slight improvement in promotion in 1936 and 1937, he said, redundancy again reared its head in 1938 and continued in the earlier months of 1939 and stagnated promotion is again the order of the day, if anything, intensified with the passage of time, and he quoted what he described as typical examples of slow promotion to illustrate the position.

Other reasons in support of the claim for increased wages, Mr. Squance said, were set out in a statement as follows:—

1. The present standard wages of footplate-men were fixed by national agreements in 1919-1920, 19 years ago, in which period there has been considerable speeding up of duties, in some instances by 100 per cent. or more. 1939 intensified railway operations merit 1939 hours of labour, wages and conditions of service.

2. This increase has been brought about by many forces of rationalisation introduced in recent years in all forms of railway operation from shunting to main line goods, express and passenger trains.

3. The heavier loading of trains of today travelling at greater speed involved added responsibility, physical and mental strain, and a greater expenditure of human energy than in 1919-1920.

On the claim for additional holidays Mr. Squance said, the reference to this question in Railway Staff National

Tribunal decisions Nos. 2 and 3 was accepted as very favourable. In decision No. 2 the tribunal stated:

The grant of extra holidays would, of course, be a concession going beyond the standard agreed in 1919. In general we think that, as the financial situation permits concessions, a restoration of standard rates and conditions should take precedence over demands going beyond them. This principle might possibly admit of some exception if it could be conclusively shown that changed conditions of work since 1919 involved for certain grades a substantially greater strain of which an extra holiday allowance would be an appropriate recognition.

In decision No. 3 the tribunal stated as follows:—

We were nevertheless impressed, in the course of the evidence, with the increase of the summer excursion work of the railways, particularly in connection with Sunday excursions, and the consequent risk of greater strain. This represents a real change since the standard rates and conditions were negotiated, and we consider that it should be recognised by a modification of those conditions. We do not consider, therefore, that the special grant of additional holidays with pay to these men is justified beyond the two days in lieu. We recommend, however, that the companies should in all such cases arrange to the utmost extent to grant holidays without pay if requested by the men concerned, subject, of course, to adequate notice being given.

On the claim in regard to Sunday duty Mr. Squance contrasted the duties performed by the locomotive grades with those performed by other grades, and argued the claim on the skill, responsibility and onerous duty of the footplate grades. The last item of the claims presented by the society was for the abolition of the extended rosters, and Mr. Squance said that two things were involved: (1) evidence of greater fatigue arising from intensified working involving additional physical effort and nervous strain, and the urgency of shorter hours on duty to ease the pressure and lessen the ill-effects of this greater fatigue, and (2) the non-observance of existing agreements.

He referred to previous decisions of the tribunal in regard to preventable overtime, and said that overtime is on the increase and local efforts to avoid it had proved unsuccessful. Mr. Squance concluded his case by surveying the financial position of the railway companies, during which he made reference to the evidence submitted to the Railway Rates Tribunal by Sir William Wood in June, 1939.

The R.C.A. Claim

Mr. Stott, like Mr. Marchbank and Mr. Squance, opened his case by making reference to decision No. 5 of the tribunal. He said the members of the association were surprised and disappointed that not one of those four claims was conceded by the tribunal, but after taking everything into account the members accepted their executive committee's recommendation that the association should acquiesce in the negative decision of the tribunal. That acquiescence was influenced by two considerations: the members of the Railway Clerks' Association wished for a settlement of claims in regard to

some of the railway superannuation funds, and they also wanted the National Union of Railwaymen to succeed in its claim for a minimum wage of 50s. a week.

He said that sympathy with the N.U.R. claim was very real and widespread, but in the future there might be occasions when the R.C.A. would submit that its own claims should rank as equal with or even come before the claims of the N.U.R. Members of the R.C.A. recognised that a claim based on minimum human needs was in a different category from claims based on the importance or responsibility or value of work and service, and they had therefore been willing to forgo, for the time being, all but one of their own claims.

Mr. Stott explained that all members of the wages grades are paid at the rate of time-and-a-quarter for any time worked between 10.0 p.m. and 4.0 a.m., but the only members of the salaried grades who receive that payment were the Railway Clearing House numbertaking staff and those controllers and supervisors who did not have the aggregation allowance—the aggregation allowance of the other controllers and supervisors and of other grades covered emergency night duty. Clerks who worked all the hours between 10.0 p.m. and 4 a.m. on each of six nights in every alternate week or every third week received one night off with pay in every fifteen such turns. Clerks who always finished after 10.0 p.m. or who always commenced before 4.0 a.m. received one night off duty with pay in every ten turns of such duty.

Referring to the national agreement, which provided that some but not all of the salaried grades should receive payment for night duty, Mr. Stott said he did not admit that the agreements of twenty years ago were regarded by the R.C.A. as being entirely satisfactory, and anyway 20 years was too long a time for conditions to have remained unchanged.

It was submitted that different treatment of men working side by side in an office throughout the night period, as in the case of controllers who receive the extra payment and their assistants who do not, had always been regarded as inequitable. The night off in fifteen awarded by the tribunal in decision No. 3 did not apply to all intermittent night workers, and was not equivalent to the time-and-a-quarter payment. Further, it had created certain difficulties and hardships.

The night off in ten applied only to the clerical staff, and it has always been regarded in the nature of relief from continuous night duty. It should be appreciated that, unlike other railway workers, those who received the night off in ten never had any other nights off. Mr. Stott explained that he was asking that the clerks who were on continuous night duty should have the extra payment in addition to the night off in ten. Since the claim was last

heard the companies financial position had improved.

The Railway Companies Case

Mr. Darbyshire opened the case of the railway companies by pointing out that the whole of the claims now presented were included with those heard by the tribunal in January last. He gave a *résumé* of the negotiations which had taken place between the railway companies and the trade unions since that time, stating that the present proceedings arose directly out of a meeting between the companies and the trade unions, held on August 28, which was arranged in order that the possibility might be explored of effecting an all-round settlement which would be acceptable to all the parties. At that meeting the N.U.R. had made it clear that, short of the full claim for a 50s. minimum wage being conceded, there was no possibility of a settlement so far as that union was concerned, but as the companies could not concede this claim, they intimated that no purpose could be served by pursuing the

Year	Gross Receipts	Expenditure	Net Revenue
1932	£ 164,966,187	£ 136,222,183	£ 28,744,004
1933	165,102,466	133,999,048	31,103,418
1934	171,989,712	138,205,962	33,783,750
1935	174,579,827	140,464,438	34,115,389
1936	181,693,678	145,963,117	35,730,561
1937	190,453,163	152,550,816	37,902,347
1938	182,526,800	153,542,456	28,984,344
Net increase in 1938 over 1932 ..	17,560,613	17,320,273	240,340

proposal for an all-round settlement.

Mr. Darbyshire stated that the claims of the N.U.R. and the A.S.L.E.F. conflicted with one another as, while the latter sought improvements in the conditions of service of drivers and firemen, the former, who also represent the same grades, had contended that until the full claim for a 50s. minimum wage was satisfied, they had no claim on behalf of such grades. So long as this position was maintained, he said there could be no reasonable prospect of a settlement acceptable to all concerned. The railway companies were anxious that the claims of all sections of staff should receive equal consideration on their merits, but this was only possible through the full co-opera-

tion of the unions and the recognition by them of this same principle.

Mr. Darbyshire submitted a number of statements to the tribunal, showing the net revenue, 1929 to 1938, gross expenditure 1932 to 1938, weekly traffic receipts 1937 to 1939, aggregate weekly traffic receipts 1929 to 1939, effect of the A.S.L.E.F. claim on existing rates of pay, and the estimated annual cost of the claims. The estimated cost of the various items of the claims is set out in the table at the foot of this page.

Mr. Darbyshire proceeded to examine the position of the companies over a series of years. During the years 1929 to 1938 the lowest level of net revenue was that of 1932 and each subsequent year to 1937 showed an improvement. This improvement, however, was almost all cancelled out in 1938 by the figures of £8,918,000, making the result for that year only £240,000 better than in 1932.

The gross receipts, expenditure and net revenue are shown in the statement at the top of this page.

The increase in expenditure from 1934, it was stated, was due to (1) cost of handling additional traffic, (2) restoration of the temporary deductions from salaries and wages which applied in whole in 1932 and in part to the years 1933 to 1937, (3) other additions to the level of wages rates, (4) the great increases in prices of materials in 1936, 1937 and 1938, mitigated substantially by (5) economies in working arising largely out of outlay on new works. On the receipts side, Mr. Darbyshire said there were reductions due to lower charges for certain traffics in order to meet road competition, and, on the other hand, an increase in charges, referred to as 5 per cent. but equal to about 3½ per cent. from October 1, 1937, but the large decrease in 1938 was due to the trade recession which set in about March of that year.

Dealing with traffic receipts Mr. Darbyshire pointed out that when the tribunal issued its decision No. 5 the decline in receipts was still continuing, and at the date of the decision were £1,488,000 below those for the corresponding period of 1938. The lowest point of the decline was at the twelfth week (March 26) when the decrease was £1,789,000, but by the 24th week (June 18) there was an increase of £47,000, which by the 34th week (August 27) was £2,620,000.

Turning to the net position for the first half of 1939, with an increase of £747,000 in gross receipts from all sources, there was a reduction in expenditure of £1,149,000, making a net increase of £1,896,000 compared with

ESTIMATED ANNUAL COST INVOLVED IN CLAIMS SUBMITTED BY TRADE UNIONS TO RAILWAY STAFF NATIONAL TRIBUNAL

Claim	Union submitting claim	Estimated annual cost of conceding claim to staff covered by claim	Estimated annual cost of granting increase in rates of conciliation grades, additional to those claimed, in order to provide necessary differentials between grades	Estimated annual cost of applying concessions to other staff who would have claim to corresponding improvements	Estimated total annual cost (direct col. 3—and indirect cols. 4 and 5) of conceding claim
(1)	(2)	(3)	(4)	(5)	(6)
		£	£	£	£
1. Minimum rate of 50s. for any adult conciliation staff	N.U.R.	1,018,000	959,000	152,000	2,129,000
2. Increases in rates of pay for drivers, motormen, firemen, and cleaners ..	A.S.L.E.F.	778,000	—	—	778,000
3. Annual holidays — Increase from 6 to 12 days (drivers, motormen, firemen, and cleaners) ..	A.S.L.E.F.	307,000	—	1,088,000	1,395,000
4. Sunday duty— (i) Minimum payment of 8 hours plus half time for all time worked, for each time of signing on duty on Sundays (drivers, motormen, firemen, and cleaners)	A.S.L.E.F.	68,000	—	158,000	226,000
(ii) Payment at Sunday rate for the Monday portion of turns commencing on Sunday extending into Monday (drivers, motormen, firemen, and cleaners)	A.S.L.E.F.	16,000	—	55,000	71,000
5. Abolition of extended rosters (drivers, motormen, firemen, and cleaners) ..	A.S.L.E.F.	91,000	—	60,000	151,000
6. Extra payment in respect of night duty between 10.0 p.m. and 4.0 a.m. (salaried staff)	R.C.A.	58,000	—	—	58,000
Total		2,336,000*	959,000	1,513,000	4,808,000

* £17,000 included in Item 1 in respect of adult engine cleaners with rates less than 50s. who are also covered by Item 2.

the first half of 1938. In 1938, however, there was a net decrease of £4,668,000, so that compared with 1937 the first half of 1939 shows a decline of roughly £2½ millions. Mr. Darbyshire concluded his review of the financial position by saying that the outbreak of war, the control of the railways by the Government, and the consequential changes in the position make it impossible to place before the Tribunal any further evidence on the financial position.

Mr. Darbyshire now began his examination of the individual claims and dealt first with the claim of the N.U.R. for a minimum wage of 50s. a week. He referred to the decision of the tribunal in 1937 under which 75,000 men received an advance of 1s., and 1,300 men an advance of 6d. a week, which with certain other improvements cost the companies £370,000 a year. Since the decision of the tribunal in January last the companies had increased the minimum rate to 45s. a week, which had benefited about 15,000 men and had cost the companies approximately £86,000 a year. He made comparisons between the rates paid in 1914 and the present minimum, pointing out that while the average rate of the lowest paid conciliation grade was 19s. 2d. in 1914, the rate at the present time was 45s. With the present cost of living figure of 55 points above 1914 this represented a betterment in real wages of 51 per cent. There were approximately 102,000 conciliation staff rated at less than 50s. a week, but only 53,000 who were in receipt of earnings less than 50s. a week. In considering the adequacy of the minimum rate it was stated that account should be taken of certain other emoluments received by the staff, also the regularity of employment.

The claim, if conceded, would place a large number of men with different responsibilities on the same rate of pay and would destroy the relationship between the grades, and would therefore involve consequential increases for other staff. The difficulty would also arise in connection with the differentials for men according to whether they were employed in London, industrial, or rural areas.

Dealing with the claim for increased rates of pay for drivers, motormen, and engine cleaners, Mr. Darbyshire said that the total number of men in these grades was 72,300, and he suggested that there had been no increase in the responsibilities of the men such as to justify the increase in the rates of pay claimed. The present rates of pay were contrasted with those paid in 1914 and, taking into consideration the increase in the cost of living since 1914, the betterment in real wages of a driver was stated to be 24s. 5d. per week, or 39 per cent., and for a fireman, 28s. 3d. a week, or 70 per cent. It was argued that the rates of pay of drivers and firemen must be considered in relation to the rates of pay of other railway grades, and to grant an advance such as was claimed would throw the two grades out of line with the other conciliation grades and

would lead to applications for similar advances for conciliation grades. On the question of engine cleaners it was pointed out that juniors already enjoyed higher rates than other junior conciliation staff. Cleaners at 22 years of age receive 48s. a week, and it was contended that by comparison with other grades engine cleaners were already dealt with generously. Every single turn worked in a higher grade by a cleaner or a fireman, it was stated, was credited towards his next advance. The question of strain on the staff and the ages of firemen and cleaners on promotion was also dealt with, but on the question of speeding up, &c., Mr. Darbyshire referred the tribunal to the statement which he made at the hearing in January last.

Dealing with the question of health of drivers and firemen, Mr. Darbyshire submitted statistics showing the number of staff in various grades who, during the years 1937, 1938 and 1939 up to date had been removed from their grade owing to physical disability other than defective eyesight. Out of approximately 66,000 men in the grades of driver and fireman, the numbers removed during the three years were 63, 65, and 28, respectively; out of 14,000 goods guards the numbers removed were 38, 36, and 21, respectively; out of 6,000 passenger guards the numbers removed were 9, 7, and 11, respectively; and out of 16,000 shunters the numbers removed during the three years were 50, 39, and 28, respectively.

On the claim for increased holidays, Mr. Darbyshire stated that similar claims had been considered on a number of previous occasions, but on each occasion up to 1937 the appropriate tribunal has found against the claim. In August, 1937, the tribunal dealing with a claim for additional holidays granted two days' leave for those required to work on Whitsun Monday and August Bank Holiday, but decided against the claim for 12 days' holiday.

In January this year the tribunal again dealt with a similar claim and found against it, and it was argued that since there was no case for 12 days' holiday with pay in the circumstances reviewed by the tribunal as recently as August, 1937, and again in January last, there could be no case at the present time. Mr. Darbyshire referred the tribunal to his statement in regard to holidays at the hearing in January, and proceeded to examine the present claim from the point of view as to whether there was any case for special treatment of drivers, firemen, and cleaners as distinct from other sections of staff. He said that prior to the national agreement on none of the railway companies had men in these grades received longer holidays than a number of other conciliation grades, and there had been no change since that time to justify better treatment at the present time.

Mr. Darbyshire quoted from previous decisions of the tribunal, which, he said, the society regarded as admissions that the case for increased holidays

for enginemmen as distinct from other grades has been made out. The companies, however, did not so interpret the expressions used by the tribunal, but in order that the position in regard to Sunday work might be fully appreciated by the tribunal Mr. Darbyshire said that it would be entirely wrong to deduce from arguments used at this or previous hearings that the Sunday duty of enginemmen is greater in extent than that of a number of other conciliation grades. In support of this he submitted statistics which showed that for the 12 months ended July 1 last on the Southern Railway the percentage of drivers and motormen working 26 Sundays and upwards was 30; for passenger guards working 26 Sundays or upwards it was 53, and for signalmen working 26 Sundays or upwards it was 71 per cent. On the L.N.E.R. the percentages for the same grades were: drivers and motormen 6½, passenger guards 25, and signalmen 33. On the Southern the number of drivers and motormen working 6 or more consecutive Sundays out of 13 represented 8 per cent., passenger guards 9 per cent., and signalmen 11 per cent., while on the L.N.E.R. the percentages were: drivers and motormen 3 per cent., passenger guards 15 per cent., and signalmen 10 per cent.

Dealing with the claim for an increase in the minimum payment for Sunday duty, Mr. Darbyshire pointed out that the minimum payment for Sunday duty for trainmen was already higher than that for other conciliation grades, and it was submitted that an improvement in Sunday pay arrangements of drivers, firemen, and cleaners as is claimed, could not be conceded without involving improvements in the Sunday pay arrangements of other conciliation grades. Indeed, it was stated, Mr. Marchbank had made it clear in the discussions which have taken place with the companies that if anything is given to the enginemmen on Sunday duty, he would be bound to press for equal consideration for the other conciliation grades.

The remaining claim was that of the R.C.A. for extra payment for night duty and it was pointed out that claims for additional payment for night duty were dealt with by the National Wages Board in 1923 and 1925, and by the tribunal in August, 1937, and January, 1939. All the claims, except that dealt with by the tribunal in August, 1937, were rejected, and although a concession of one night off in fifteen had been granted in August, 1937, to clerks working intermittent night duty, it was suggested that a case had not been made out for extra payment of night duty for railway clerical staff.

The R.C.A. had based its claim on two main grounds: (1) that the wages grades receive extra payment for night duty, and (2) that certain salaried grades receive payment for night duty. Dealing with the first of these arguments, Mr. Darbyshire said there was a very important distinction between

the conditions of service of clerical staff, and those of wages grades, namely whereas wages grades lose their pay for time when they are absent from duty for their own purposes, clerical staff are more favourably dealt with, and in addition to very generous provisions by way of continuance of salary during sickness, their pay is not ordinarily stopped for occasional special leave. It was in such material distinctions between the two sets of staff that the justification lay for dealing with them differently in regard to night duty and it was submitted that it is unfair to seek to claim for the clerical staff the benefit of a particular provision which happens to be more favourable to the wages grades, without regard to the many other respects in which the clerical conditions are better. On the second point attention was drawn to the fact that the differences were made by agreement with the unions at the time of the national agreements, and it was stated that no change has taken place in the relative circumstances of the particular grades since that time.

Mr. Darbyshire summarised his submissions on the various claims as follows.

50s. 0d. Minimum Wage.—That the cost of such a claim is altogether prohibitive. That in advancing the minimum rate recently to 45s. a week the companies have gone as far as the financial situation justifies, and have adequately complied with the conclusion of the tribunal to make an increase upon the lowest rates a first claim as soon as the financial position made any substantial concession possible. That having regard to the increase which has taken place in the rates of pay of the lowest grades since the time of the national agreement in relation to the change in the cost of living, further improvements cannot be justified at the present time.

Increased Pay for Enginemen.—That there has been no change in the responsibilities of such staff as would justify the increases claimed. That in so far as larger engines are operated and there is increased speed and mileage, benefits accrue to the men in relation thereto. That their present rates of pay do not compare unfavourably with other conciliation grades and there is no case for exceptional consideration for these grades at the present time. That the financial position would not admit of such a claim being met.

Increased Holidays.—That there is no case for granting increased holidays to these grades as distinct from a number of other conciliation grades. That the financial position will not permit of any extension of annual holidays generally at the present time.

Payment for Sunday Duty.—That the claim put forward goes beyond what was agreed at the time of the national agreements. That even the national agreement conditions were considered by the National Wages Board to go beyond the requirements of the case at a time when the financial position was much better than at the present time.

That here again, such a claim cannot be dealt with in isolation for loco grades, and that improvements in the Sunday pay of loco grades would necessitate consideration for other grades. That, moreover, the two unions representing loco grades are not in agreement as to the relative merits of this and other claims before the tribunal.

Cancellation of Extended Rosters.—That the provision for rostering up to 9 hours where economy will accrue, is essential to economical working, and that it was so recognised as long ago as 1922, following experience of the working of the 8-hour day in relation to railways. That the appropriate tribunal has confirmed this position from time to time since, and that the need for such provision is more than ever necessary in the present financial circumstances of the companies.

Payment for night duty for Clerical Staff.—That this introduces an entirely new principle for clerical staff, for which there is no justification by way of altered circumstances. That there is no case for change in practice because of comparison with other grades. That the representatives of the staff sought relief from night duty rather than extra payment for such duty at the time the national agreement was negotiated. That having regard to provisions then made and still existing, to concede payment would be to recompense such staff twice over in regard to night duty.

In conclusion, Mr. Darbyshire suggested to the tribunal that he had established that the financial position of the companies does not justify any improvement in the rates of pay and conditions of service beyond the increases already granted by the companies as from the end of July. That it was after considering the results for the half of 1937 and in the light of improving prospects that the tribunal made an award giving financial benefit to the staff to the extent of £2,900,000 per annum. That the tribunal at that time recognised that a substantial change in the financial position of the railways was necessary before changes in present standards could be considered appropriate. That it is of some significance to recall that the present claims with the single exception of the 9-hr. roster all seek to obtain conditions in excess of those obtaining at the time of the national agreement.

Second, that even if the companies were prepared to make some small sacrifice over and above what they have considered to be justified there is, with the present attitude of the unions, no hope of giving any measure of satisfaction which would justify such sacrifice.

Third, that it is a necessary preliminary to any satisfactory settlement, of either the present or future claims, that the unions must resolve their differences amongst themselves and avoid the presentation of conflicting claims.

As we go to press the unions are replying to Mr. Darbyshire, after which the tribunal will sit in private to consider the evidence which has been presented to them.

British and Irish Railway Stocks and Shares

Stocks	Highest 1938	Lowest 1938	Prices	
			Sept. 19, 1939	Rise Fall
G.W.R.				
Cons. Ord. ...	65½	25½	22½	—2
5% Con. Prefce....	118½	74	80	—
5% Red.Pref.(1950)	111½	90	92½	—
4% Deb. ...	111	97½	93½	—
4½% Deb....	112½	100½	96½	—
4½% Deb....	118½	104	102½	—
5% Deb.	131½	119	112½	—
2½% Deb....	69¾	60	56½	—
5% Rt. Charge ...	129	114	106	—
5% Cons. Guar. ...	128½	103	99½	—
L.M.S.R.				
Ord.	30½	11	11	+1
4% Prefce. (1923) ...	70½	23	36	—
4% Prefce.	82½	43¾	49½	—
5% Red.Pref.(1955)	103½	66	76	—
4% Deb.	105½	85	87½	—
5% Red.Deb.(1952)	114½	105	104	—
4% Guar.	102¾	77½	78	—
L.N.E.R.				
5% Pref. Ord. ...	89½	3½	3¾	—½
Def. Ord.	47½	21½	25½	—½
4% First Prefce. ...	68½	21	29½	—
4% Second Prefce. ...	27½	8	9½	—
5% Red.Pref.(1955)	97	40½	45	—
4% First Guar. ...	97½	66½	63½	—
4% Second Guar. ...	91½	52	55½	—
3% Deb.	79½	60	59½	—
4% Deb.	104½	77	79	—
5% Red.Deb.(1947)	110½	97	100½*	—2
4½% Sinking Fund	108½	101	98	—
Red. Deb.				
SOUTHERN				
Pref. Ord.	87	47½	49	—4
Def. Ord.	21½	9½	9	+1
5% Pref.	115	83	80	—
5% Red.Pref.(1964)	115½	98	97½	—
5% Guar. Prefce. ...	128½	106	105	—
5% Red.Guar.Pref. ...	116	108½	105	—
(1957)				
4% Deb.	109½	95	93½	—
5% Deb.	129	117	112½	—
4% Red. Deb. ...	107	101½	101½	—
1962-67				
BELFAST & C.D.				
Ord.	4	3½	4	—
FORTH BRIDGE				
4% Deb.	102	99½	83½	—
4% Guar.	103½	94½	82½	—
G. NORTHERN (IRELAND)				
Ord.	5½	2½	6½	+2½
G. SOUTHERN (IRELAND)				
Ord.	25½	8½	9½	—
Prefce.	35	13	17	+7
Guar.	70½	30½	35	+10
Deb.	83	56	54	+6
L.P.T.B.				
4½% "A" ...	119½	107½	103	—
5% "A" ...	130	117	107	—
4½% "T.F.A." ...	108	98	101	—
5% "B" ...	122½	105	102	—
"C" ...	84	68	65	—
MERSEY				
Ord.	24½	16½	22	—
4% Perp. Deb.	102½	94½	90	—
3% Perp. Deb.	77	69	65½	—
3% Perp. Prefce. ...	66½	57	52½	—

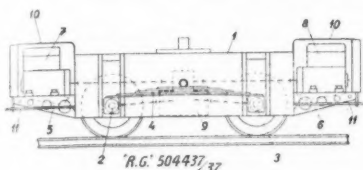
* ex dividend

ABSTRACTS OF RECENT PATENTS*

No. 504,437. Bogie Truck for Railway Motor Vehicles

Zavody Ringhoffer-Tatra a.s., of Karlovska 200, Prague-Smichov, Czechoslovakia. (Convention date: July 31, 1937.)

The box-shaped frame 1 of the bogie truck has axles 2, 3 which may be resiliently mounted by laminated springs 4, cantilever bearers 5, 6 on the front and rear walls of the box being adapted



to support the propelling engines 7, 8 by means of rubber pads. The said engines drive in common, or either of them separately, mechanical, electrical or other gearing 9 and therethrough one or both of the axles 2, 3, and are protected at the top by bonnets 10. Engine platforms 11 are arranged at the sides of the bearers 5, 6.—(Accepted April 25, 1939.)

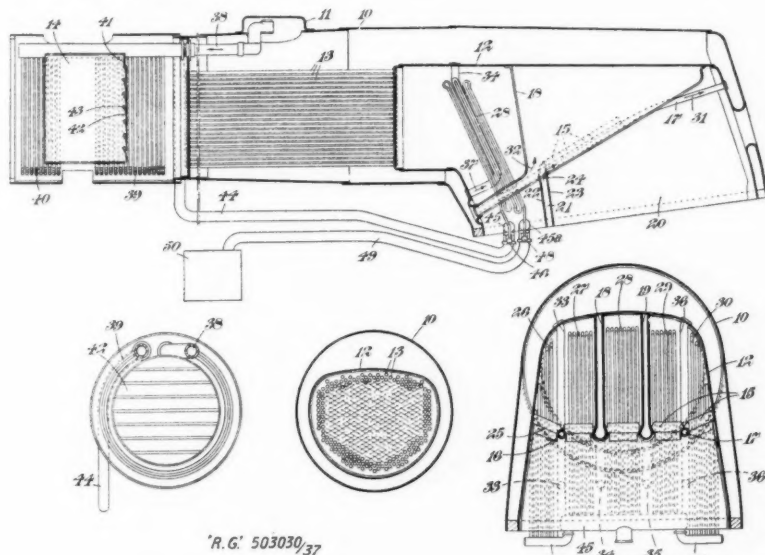
No. 503,030. Boilers

(A communication from Aktiebolaget Ljungströms Ångturbin, of Kungsgatan 32, Stockholm, Sweden.)

William John Tennant, of 111-112, Hatton Garden, London, E.C.1. (Application date: October 11, 1937.)

A superheater, comprising groups of tubes 26-30 separated at their lower

portions by archtubes 16, 17 and siphons 18, 19 through which water circulates in the direction of arrows 31, 32, is partly or entirely located in the firebox 12 of a boiler comprising a shell 10, a dome 11, smoketubes 13 and a smokebox 14, and is protected from direct radiation of heat from the fire zone 20 by means of a brick arch consisting of brickwork elements 15 which rest on the archtubes 16, 17 and on the enlarged bottom portions of the thermic siphons 18, 19. The rear end of the fire zone 20 is limited by a chamber 21 between the walls 22, 23 which are cooled by air flowing in the direction of arrow 24 and flowing through openings 25 into the space below the brick arch. Water tubes 33-36 are provided between the upper portions of the superheater tube groups, water being circulated therein in the direction of the arrow 37. Wet steam passes from the dome 11, through a pipe 38, to a pre-superheater consisting of groups 39, 40 of annular tubes. A screen 41, consisting of a number of flaps 42 on pivots 43, normally forming a closed wall, direct the gases from the smoketubes 13 towards the superheater. From the pre-superheater steam passes through pipe 44 to the inlet header 45 of the superheater, which is connected with the groups 27-29, the groups 26 and 30 being secured to short pipes 46 and 47. The outlet of the superheater comprises a main header portion 45a and two pipes 48, the steam being conducted therefrom by means of a pipe 49 to the locomotive engine such as a turbine 50.—(Accepted March 30, 1939.)

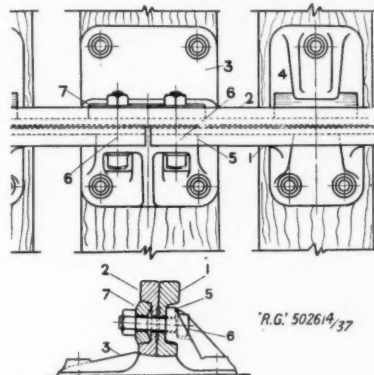


* These abridgments of recently published specifications are specially compiled for THE RAILWAY GAZETTE by permission of the Controller of His Majesty's Stationery Office. Group abridgments can be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, either sheet by sheet as issued, on payment of a subscription of 5s. a group volume, or in bound volumes, price 2s. each, and the full specifications can be obtained from the same address price 1s. each.

No. 502,614. Railway Track

Stanley Curtis Algar, of Cumberland, Chesham Bois, Buckingham. (Application date: September 1, 1937.)

A railway track having a bull-headed or flat-bottom profile consists solely of lengths of two uniform rail sections 1 and 2, each length of section 2 overlapping a joint between lengths of section 1 and vice versa. Each joint is

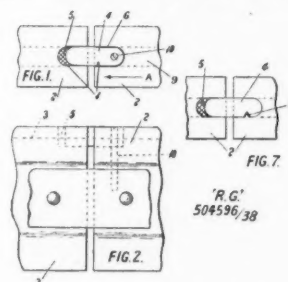


made at a special chair 3 with a single upstanding jaw 5. The webs of the sections 1, 2 are provided with holes to receive bolts 6 which also pass through the jaws 5 and an outer fish-plate or washer plate 7. Between the joints, the lengths of sections 1, 2 rest in intermediate chairs 4.—(Accepted March 21, 1939.)

No. 504,596. Railway Joint

James Fazakerley, of 131, Brompton Street, Oldham, Lancashire. (Application date: April 29, 1938.)

A rail joint comprises a bar 4 disposed within slots 1 in the opposed ends of the rails 2 and completely filling the slot in one rail and retained against movement by securing means associated

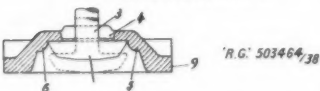
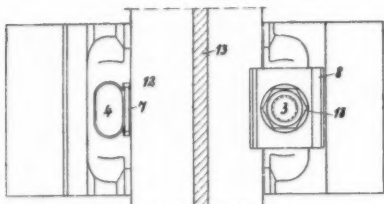
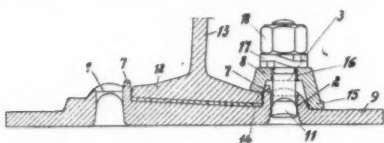


with the said slot and the bar such as welding 6 or a peg 10, the other slot being only partly filled by the bar and the remaining part being filled with plastic substance 5 such as a composition containing 80 per cent. beeswax, 15 per cent. pure pitch and 5 per cent. creosote. The slots 1 are preferably cut deeper than the maximum permissible wear of the rails, as indicated by the line 3. In a modification, the peg 10 is preferably tapered and the metal of the rail 2 is drifted into a notch in the bar 4, as at 12 (Fig. 7).—(Accepted April 27, 1939.)

No. 503,564. Railway Assembly

(A communication from Gesellschaft für Oberbauforschung) Joseph Chatwin, of 253, Gray's Inn Road, London, W.C.1. (Application date: August 5, 1938.)

Chair plate, sleeper, or like assemblies comprise substantially semi-cylindrical hollow ribs 1, 2 in the chair plate 9, sleeper or the like, parallel and adjacent to each side of the foot or flange 12 of the rail 13; also an oblong hole 4 in each of said ribs, a clamping member 8 and a screw bolt 3 for securing the rail on each side, a head 11 on the screw bolts 3 for insertion in the holes 4 and corresponding in shape to the interior of the hollow ribs, and means causing the



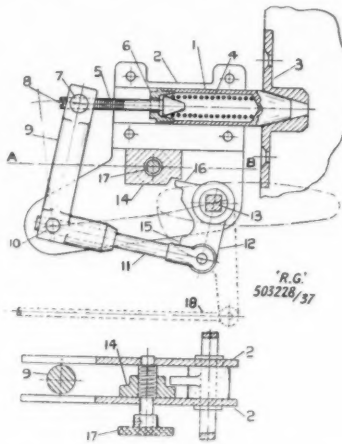
screw bolts to take up central positions to the ribs on tightening. The said means, for a chair plate assembly as illustrated, comprise a spring washer 17 and nuts 18, the bolts 3 being centred, on tightening, by virtue of shoulders 5, 6. A shorter limb 14 of each clamping member 8 is prevented from creeping by a flange 7, and the other limb 15 rests on the chair plate 9. The screw bolt 3 passes through a hole 16 in the clamping member 8.—(Accepted April 6, 1939.)

No. 503,228. Locks for Carriages

Everard Arthur Fisher, of 13, King's Drive, Littleover, Derby. (Application date: October 4, 1937.)

A lock for carriages comprises a plunger or bolt 1, preferably conical at the locking end, guided in the housing 2 and adapted to engage a recess in the keeper 3 in the framework of the carriage under the pressure of a spring 4 within the bolt. The bolt 1 is propelled by a rod 5, connected thereto by a cap 6, which is screwed and carried in a trunnion 7. Rotation of the rod 5 by the screwdriver slot 8 adjusts the bolt 1. The trunnion 7 is pivoted to a bell-crank lever 9, which is itself pivoted at 10 to the housing 2 and provided with a guide for a rod 11 connected to a lever 12 pivoted at 13. The lever 12 is adapted to be rotated by a door handle.

A travelling nut 14 is contacted by a lug 15 on the lever 12, this 15 acting as a stop in the locked position and the nut 14 acting as a stop in the unlocked position, and safety catch means

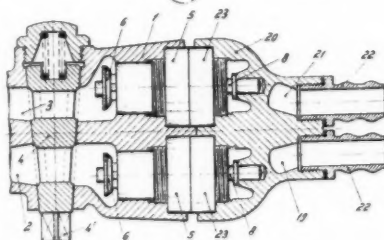
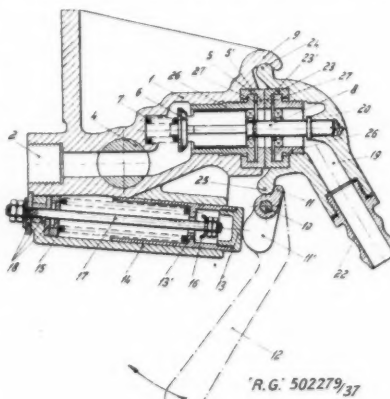


are provided by a lug 16 on the lever 12 which contacts the nut 14 after being propelled transversely by the knurled head thumb-screw 17. By providing a rod 18, remote control of the lock is made possible.—(Accepted April 4, 1939.)

No. 501,279. Couplings for Flexible Conduits

Fabrica Italiana Magneti Marelli, of 22, Corso Venezia, Milan, Italy. (Convention date: January 18, 1937.)

A coupling for flexible conduits on vehicles comprises an element 1



mounted on a tractor vehicle and is provided with conduits 2, 3 which are controlled by a cock 4 operated by

means of its square head 4', and which house automatic valves 6, each closed by a spring 7 and held normally open by a pin 8 on a movable element 20. Under the action of a spring 15, a hollow piston slide 13, which controls an electric switch of the apparatus for signalling uncoupling of the trailer, bears, in a guide 14, on the extension 11' of an engagement finger 11 pivoted at 10. The said switch comprises a contact 16 on a conductor 17 insulated at 18, and a shoulder 13' on the slide 13, contact being made on uncoupling because the extension 11' is then not arrested by the element 20, and thus does not form a stop for the said slide 13. The movable element 20 is provided with conduits 19, 21 having nipples 22 for receiving flexible coupling tubes. Fluid tightness is ensured by packings 5, 23, which are preferably formed with flexible tips 5', 23' spaced away from the mounting sleeve 26, said sleeves being pressed together by fluid pressure in the spaces 27. A projection 24 and 25 co-operates with a hook seat 9 to form a fulcrum.—(Accepted March 15, 1939.)

COMPLETE SPECIFICATIONS ACCEPTED

500,881. Cochran & Co., Annan, Limited, and Simpson, H. M. "Steam boilers and water-heaters and railcars or other vehicles in which they are incorporated."

500,921. Budd Manufacturing Company, E. G. "Sleeping-compartments for railway cars and the like."

500,947. Maley, A. W., and Taunton, E. M. "Generation of electric currents on vehicles."

501,340. Linde Air Products Company. "Method of and apparatus for hardening the surface of narrow metallic bodies such as rails."

501,391. Felton & Guillaume Carls-werke A.G. "Devices for closing an electric circuit by means of rails."

501,580. Oster, L. E. W. Montrose. "Four-wheeled bogie for high-speed vehicles, particularly railway vehicles."

501,808. Dixon, M. G. (Carnegie-Illinois Steel Corporation). "Manufacture of rails."

502,085. Standard Telephones & Cables Limited, and Griffiths, J. B. "Railway signalling systems."

502,136. Steiner, R. "Monorail railway and car driven by air propellers."

502,279. Fabrica Italiana Magneti Marelli. "Couplings for vehicle conduits."

502,361. Westinghouse Brake & Signal Co. Ltd. "Fluid-pressure braking apparatus."

502,569. Pautze, H. "Printing-machines for printing railway tickets."

502,614. Algar, S. C. "Railway track."

502,717. Auld & Sons Ltd., D. Graham, J., and Graham, D. A. "Safety valves for steam boilers and the like."

503,030. Tennant, W. J. (Aktiebolaget Ljungströms Angturbin). "Steam boilers of the locomotive boiler type."

503,048. General Railway Signal Co. Ltd. "Route-setting systems for railways."

OFFICIAL NOTICES

Crown Agents for the Colonies

COLONIAL GOVERNMENT APPOINTMENTS.

APPLICATIONS from qualified candidates are invited for the following post:—

ASSISTANT LOCOMOTIVE RUNNING SUPER-INTENDENT required by the Palestine Railway for two tours of 18 to 24 months residential service with possible permanency. Salary £P300 a year, rising to £P500 a year plus expatriation allowance of £P50 a year and a temporary and variable cost of living allowance at present fixed at the rate of £P48 a year (£P1 equals £1). The initial salary will be fixed in the scale according to the qualifications and experience of the candidate selected. Free passages. Candidates, preferably unmarried, age 30-40, must have served a pupillage or a full apprenticeship in the locomotive Workshops of a British Railway, and must be Associate

Members of the Institution of Civil or Mechanical Engineers, or hold an engineering degree or diploma exempting them from passing the qualifying examination for such membership. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/8834.

OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Thursday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

Universal Directory of Railway Officials and Railway Year Book

45th Annual Edition, 1939-40

This unique publication gives the names of all the principal railway officers throughout the world together with essential particulars of the systems with which they are connected. Much general and statistical information about railways is also concisely presented.

Price 20/- net.

THE DIRECTORY PUBLISHING CO., LTD.

33, Tothill Street, Westminster, S.W.1

NOTES AND NEWS

Beama Dinner.—The annual dinner of the British Electrical & Allied Manufacturers' Association, arranged for November 16, has been cancelled.

Institution of Locomotive Engineers.—Owing to the national emergency all meetings of the Institution of Locomotive Engineers are postponed until further notice.

Great Western of Brazil Railway Co. Ltd.—The directors announce the formal approval and registration, by the Brazilian authorities concerned, of the new contract with the Brazilian Government notified in *THE RAILWAY GAZETTE* of August 24. The contract, therefore, now becomes effective.

Bradshaw's Air and Continental Guides.—Publication has been suspended of *Bradshaw's International Air Guide* and of *Bradshaw's Continental Railway and Hotel Guide*. The last issue of the air guide was No. 58 (August, 1939), and of the continental guide No. 948 (July 1-October 7, 1939).

Rail Detectors.—Three types of detectors for defects in rails have been evolved by the Physico-Technical Institute at Tomsk, and are being tested over the main Trans-Siberian route between Moscow and Tomsk. The most promising is said to be one which reveals defects by sound, through an amplifier.

San Paulo (Brazilian) Railway Tariffs.—It is announced by the San Paulo (Brazilian) Railway Company that the Government of Brazil has sanctioned an increase in rates in accordance with recommendations made by a Commission appointed by the Minister of Transport. It is believed that the increase will come into force on October 1.

Pennsylvania Dining Cars.—Fifteen new air-conditioned diners have just been delivered to the Pennsylvania Railroad for long-distance through trains. Five are of stainless steel, and were built by Budd; five have aluminium-alloy bodies, and were built by Pullman-Standard; and five are of high-tensile steel throughout, and were

built by the American Car & Foundry Company. The aggregate cost was \$2,100,000. Each car has a seating capacity of 48.

U.S.S.R. Traffics.—According to *Pravda*, the number of passengers carried by the Soviet railways in 1938 was 1,178 million, and the freight carried 516 million tons. The length of line in operation at the end of the year was stated to have been 52,817 miles.

Early Closing.—The Early Closing Association has appealed to the Home Secretary to extend the period of the Summer Time Act, to consider fixing earlier closing hours in view of the dark evenings ahead, to invite a general closure on Saturdays in vulnerable areas, and to urge the payment of wages in the middle of the week.

Australian Buffet Cars.—Two more air-conditioned buffet cars have been introduced by the Victorian Government Railways, and are being used on the Melbourne-Horsham and the Melbourne-Warrnambool services. Similar cars are running on the Bendigo and Albury lines, and three more are being built for use on the Mildura and Bairnsdale lines.

Rapid Railway Construction in U.S.S.R.—It is claimed that with the use of 30 excavators, 168 Bekker-type scrapers, 10 large scrapers of a new type, six grader-elevators, a large number of tractors and lorries, and mechanical track-layers, the permanent way of the new Akmolinsk-Kartaly railway in the U.S.S.R. is being laid at the rate of over six miles a day. This line is to connect the Kartaly coal area with the Magnitogorsk steel works.

Institution of Civil Engineers.—The council of the Institution has decided to continue, as far as may be practicable, the work of the institution from the headquarters building in Great George Street, Westminster, S.W.1. The meetings of the institution in London will be suspended until further notice, and the conference on engineering education and training and the road

engineering exhibition are postponed indefinitely. The reading rooms and library will be open, and the normal loan service of books available for the use of members. It is proposed to continue publication of the journal, although it may be necessary for it to appear in a different form. The October examinations of the institution will be held in London but not in the provinces. The council will continue to co-operate in the work of the central register of the Ministry of Labour and to assist the War Office and other Service departments in the recruitment of qualified civil engineers for posts in which their professional experience is of value.

Air-Conditioned Cars in U.S.A.

—Class I railroads and the Pullman Company in the U.S.A. had 11,351 air-conditioned passenger coaches in traffic on July 1. Of these, 5,024 belong to the Pullman Company.

£4,000,000 Railway Project in Finland.—Allocation of a sum of 800,000,000 marks (nearly £4,000,000) for the development of the railways in North Finland is provided for in a proposal submitted to the Finnish Diet. It is proposed to spend 50,000,000 marks of this sum this year. A new line will extend from Rovaniemi to the Port of Liinaimari on the Arctic Ocean, and will facilitate the continuation of export trade in the event of the Baltic becoming unnavigable.

Bakerloo Line Extension to Stanmore.

—Despite setbacks resulting from defence preparations and the outbreak of war, the London Passenger Transport Board is continuing work on the various sections of the £45,000,000 programme. The tube link between the Bakerloo Line at Baker Street and the Metropolitan Line at Finchley Road was intended to be opened early in October, and, although this was found impracticable in present circumstances, it is still hoped that it will be possible to bring this new line into service before the end of the year. Actually, we understand that the engineers are working with the object of completing the line by the end of October, so that the projection of Bakerloo Line tube trains to Stanmore may take place as soon thereafter as possible.

Railway Share Market

As a result of week-end international news, jobbers in most sections of the Stock Exchange marked prices down sharply, but when it became apparent that investors were continuing to take a very calm view of the position and outlook, markets developed a firmer appearance. Nevertheless values have declined on balance, and very little buying was reported. Sentiment has been governed by the tendency to await the supplementary budget, which is expected to bring increases in both direct and indirect taxation.

Apart from the surrounding market trend, home railway securities were affected by the view that the terms on which the Government has taken over the railways may not be announced until there is a final settlement of the wages claims, but there is, of course, no official basis for this assumption. Meanwhile, however, the stocks of the main line companies are not likely to attract much attention. The market is inclined to anticipate that the average results of 1936 to 1938 inclusive may be taken as the basis of revenue and dividends during the war period. If this proved the case, the junior stocks would be moderately valued at current prices, but it is not improbable

that the full details of Government control have yet to be negotiated.

Dealers have continued to quote minimum prices for the prior charge stocks of the main line companies, and it is apparent that had this not been the case, sharp declines would probably have been shown this week, having regard to the general trend on the Stock Exchange. It would seem, however, that the minimum prices are fully justified assuming that the companies and stockholders are granted fair and equitable terms by the Government. There has been some selling of the junior stocks, but it was described as by no means as large as might be deduced from the decline in prices, which was influenced by the absence of demand. Great Western ordinary moved down to 21½, while L.M.S.R. ordinary was 10½, which incidentally is slightly higher than the price current a week ago. Southern preferred, which was 53 a week ago, went back to 49, and the deferred was around 9. It would appear that Southern preferred has been reduced to an unduly low level, because this stock seems reasonably assured of its full 5 per cent. dividend whatever method is adopted by the Government in regard to payments on the junior stocks

during the war. L.N.E.R. deferred and preferred ordinary had "middle" quotations of 2½ and 3½ respectively, and it is not, of course, expected that a return of these stocks to the dividend list will be shown as a result of the changes brought about by the war. London Transport "C" stock maintained a relatively steady tendency, and at 66½ was in fact unchanged on balance, sentiment having continued to benefit from estimates of the final dividend in respect of the past financial year.

Argentine and other South American railway securities were less buoyant in view of market conditions, but few sellers were about now that the outlook is generally believed to be improving because, as time proceeds, the exports of the South American Republics will grow as a result of the war in Europe. Various preference stocks and debentures were again higher on balance. B.A. Gt. Southern 4 per cent. debentures, for instance, were three points better at 54½, and B.A. & Pacific 4½ per cent. debentures gained two points to 34, while B.A. Western 4 per cent. debentures were 45. Canadian Pacific transferred around 5½ and the preference stock was 25.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1938-39	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices				
				Total this year	Inc. or Dec. compared with 1938		Totals		Increase or Decrease		Highest 1938	Lowest 1938	Sept. 19, 1939	Yield % (See Note)	
							This Year	Last Year							
South & Central America	Antofagasta (Chili) & Bolivia	834	10.9.39	17,260	+ 6,570	36	473,950	552,210	- 78,260	Ord. Stk.	14	71½	9	Nil	
	Argentine North Eastern ..	753	26.8.39	12,506	+ 285	9	93,504	97,134	- 3,630	"	61½	2	31½	Nil	
	Bolivar	174	Aug. 1939	4,900	+ 1,000	34	34,050	30,150	+ 3,900	6 p.c. Deb.	8	7	7	Nil	
	Brazil	—	—	—	—	—	—	—	—	Bonds.	10	4	5½	91½	
	Buenos Ayres & Pacific ..	2,801	9.9.39	74,628	+ 7,762	11	773,698	745,908	+ 27,790	Ord. Stk.	61½	31½	4½	Nil	
	Buenos Ayres Central ..	190	19.8.39	\$124,300	+ \$8,200	8	\$912,300	\$878,900	+ \$33,400	Mt. Deb.	15½	8	12	Nil	
	Buenos Ayres Gt. Southern ..	5,082	26.8.39	118,548	+ 5,894	9	966,315	1,039,393	- 73,078	Ord. Stk.	17½	8½	9	Nil	
	Buenos Ayres Western ..	1,930	26.8.39	39,702	+ 3,474	9	340,819	313,584	+ 27,235	"	12½	5	6½	Nil	
	Central Argentine	3,700	9.9.39	131,405	+ 22,723	11	1,301,975	1,068,998	+ 232,977	"	13½	5½	8	Nil	
	Do	—	—	—	—	—	—	—	—	Did.	6	2½	2½	Nil	
	Cent. Uruguay of M. Video ..	972	2.9.39	16,010	+ 510	10	148,953	156,153	- 7,200	Ord. Stk.	3	11½	1	Nil	
	Costa Rica	188	June 1939	25,240	- 6,129	52	270,756	314,399	- 43,643	Stk.	28	22½	22½	87½	
	Dorada	70	Aug. 1939	14,200	+ 3,400	34	109,300	132,200	- 22,900	1 Mt. Db.	105½	104	102½	5½	
	Entre Rios	810	26.8.39	17,407	+ 707	9	143,610	133,020	+ 10,590	Ord. Stk.	71½	31½	5	Nil	
	Great Western of Brazil ..	1,092	9.9.39	6,000	+ 700	36	284,400	232,900	+ 51,500	Ord. Sh.	3½	1½	1½	Nil	
	International of Cl. Amer. ..	794	July 1939	\$463,615	+ \$19,287	30	\$3,697,627	\$3,454,817	+ \$242,810	"	—	—	—	—	
	Interoceanic of Mexico ..	—	—	—	—	—	—	—	—	1st Pref.	6d.	6d.	1½	Nil	
	La Guaira & Caracas ..	22½	Aug. 1939	7,435	+ 2,345	34	49,355	40,670	+ 8,685	Stk.	8	6½	7½	Nil	
	Leopoldina	1,918	25.8.39	23,083	+ 3,463	34	672,620	666,493	+ 6,127	Ord. Stk.	4	1	1½	Nil	
	Mexican	483	21.8.39	\$286,000	+ \$35,500	8	\$2,003,100	\$1,988,800	+ \$14,300	"	14	1½	1½	Nil	
Midland of Uruguay ..	19	July 1939	9,153	+ 74	4	9,153	9,227	- 74	"	14	1½	1½	Nil		
Nitrate	386	15.9.39	3,899	+ 122	35	84,001	105,183	- 21,182	Ord. Sh.	52½	19½	18½	71½		
Paraguay Central	274	9.9.39	\$3,068,000	+ \$199,000	11	\$35,477,000	\$33,564,000	+ \$1,913,000	Pr. Li. Stk.	60	55½	40½	141½		
Peruvian Corporation ..	1,059	Aug. 1939	61,433	+ 12,254	9	125,839	147,742	- 21,903	Pref.	53½	14½	1	Nil		
Salvador	100	26.8.39	\$10,400	+ 444	9	\$85,864	\$104,349	- \$18,485	Pr. Li. Db.	23	20	19½	Nil		
San Paulo	153½	10.9.39	23,417	+ 8,219	36	1,121,560	1,191,625	- 70,065	Ord. Stk.	64	28	24½	8½		
Taltal	160	July 1939	1,555	+ 1,955	5	1,555	3,510	- 1,955	Ord. Sh.	15½	1½	1½	10		
United of Havana ..	1,353	9.9.39	21,359	+ 2,247	11	173,023	175,070	- 2,047	Ord. Stk.	38½	1½	1½	Nil		
Uruguay Northern ..	73	July 1939	800	+ 108	4	800	908	- 108	Deb. Stk.	2	1	2	Nil		
Canada	Canadian National ..	23,698	7.9.39	833,102	+ 95,244	35	24,753,229	23,235,420	+ 1,517,809	—	—	—	—	—	
	Canadian Northern ..	—	—	—	—	—	—	—	4 p.c.	—	—	—	—	—	
	Grand Trunk	—	—	—	—	—	—	—	Perp. Dbs.	72	60	64½	65½	47½	
	Canadian Pacific	17,171	14.9.39	964,600	+ 265,200	36	18,990,000	18,317,400	+ 672,600	Ord. Stk.	87½	41½	6	Nil	
India	Assam Bengal	1,329	20.8.39	35,685	+ 4,034	20	544,331	530,008	+ 14,323	Ord. Stk.	81½	70	62½	41½	87½
	Barsi Light	202	20.8.39	2,340	+ 90	20	48,292	60,240	- 11,948	Ord. Sh.	60½	54½	45½	87½	75½
	Bengal & North Western ..	2,112	20.8.39	52,167	+ 3,400	20	1,013,797	1,117,503	- 103,706	Ord. Stk.	311	278	245	84½	7½
	Bengal Doorga & Extension ..	161	20.8.39	4,270	+ 284	20	45,361	52,445	- 7,084	"	89	83	81½	7½	4½
	Bengal Nagpur	3,267	20.8.39	181,575	+ 20,607	20	2,984,633	2,695,954	+ 288,679	"	95½	90	84½	6½	8
	Bombay, Baroda & Cl. India ..	2,986	10.9.39	208,800	+ 15,975	23	3,712,575	3,788,100	- 75,525	"	112½	95	92½	6½	8
	Madras & Southern Mahratta ..	2,967	20.8.39	129,225	+ 5,995	20	2,321,802	2,227,450	+ 94,352	"	108	97	93½	8	8
	Rohilkund & Kumaon ..	546	20.8.39	21,485	+ 1,528	20	207,843	228,987	- 21,144	"	308	285	247	7½	8
	South Indian	2,531½	20.8.39	101,619	+ 625	20	1,623,032	1,609,224	+ 13,808	"	104	101	89½	59½	8
Various	Beira	204	June 1939	83,026	—	40	719,357	—	—	—	—	—	—	—	—
	Egyptian Delta	623	10.8.39	8,875	+ 485	19	67,548	65,905	+ 1,643	Prf. Sh.	7½	5½	1½	Nil	—
	Kenya & Uganda	1,625	May 1939	206,557	+ 11,295	21	1,220,870	1,309,332	- 88,462	—	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	49	41	43	8½	—
	Midland of W. Australia ..	277	July 1939	11,258	+ 1,985	4	11,258	13,243	- 1,985	Inc. Deb.	93½	89	89	4½	—
	Nigerian	1,900	29.7.39	26,783	+ 698	18	480,613	535,616	- 55,003	—	—	—	—	—	—
	Rhodesia	2,442½	June 1939	365,928	—	40	3,246,158	—	—	—	—	—	—	—	—
	South Africa	13,284	25.8.39	646,242	+ 15,693	22	13,702,964	12,937,980	+ 764,984	—	—	—	—	—	—
	Victoria	4,774	June 1939	693,446	+ 31,680	52	9,360,329	9,809,155	- 448,829	—	—	—	—	—	—

NOTE. Yields are based on the approximate current prices and are within a fraction of 1½

† Receipts are calculated @ 1s. 6d. to the rupee

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being over estimated. The statements are based on the current rates of exchange and not on the par value